Clinic of Medicine & Surgery

THE AMERICAN JOURNAL OF CLINICAL MEDICINE

Vol. 29, No. 7 JULY, 1922

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NO.7

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THOUGH many enter in a race,
Only the **Victor** can
Show for his pains the laurel wreath:
The others "also ran."
Though hard you strive to reach Success
That goal by few is won.
Men care not what you **meant to do**
But judge by what you've **Done**!

G. H. C.

For a National Health Week

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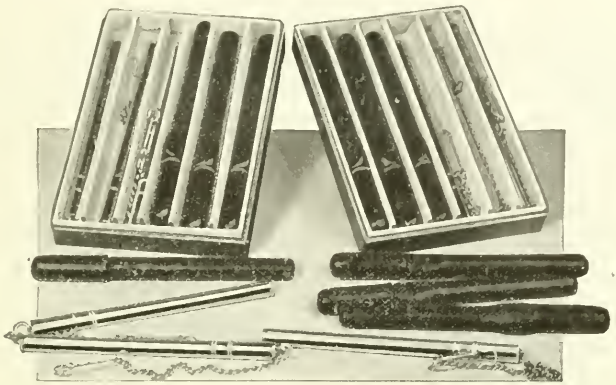

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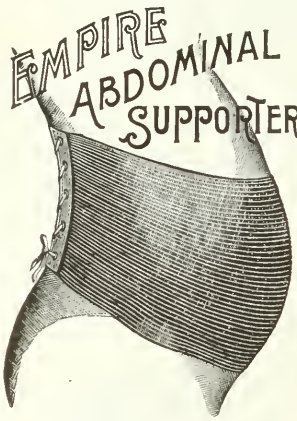

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DYSMENORRHEA

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is as effectual therapeutically to-day as in the day of Sims, and will give you the same "great service" in treating your dysmenorrhea cases, as was rendered to Dr Sims.

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DYSMENORRHŒA. 95

It has been long known that rest is most efficacious in relieving dysmenorrhœa. Some patients habitually go to bed during the menstrual process, finding so much relief from the position. There is nothing therefore new in the recommendation to rest at this time, but experience has shown that the positional treatment above described carries the effect still further. The treatment is particularly valuable in the case of young single women who are suffering from dysmenorrhœa not of such severe character as to render internal treatment imperatively necessary. And indeed I have in several cases employed positional treatment with great success where no examination at all had been made, but where the symptoms and general history conclusively showed that the patients were suffering from commencing uterine flexion.

Positional treatment is also very valuable as an adjunct in cases where internal mechanical apparatus are in use.

Palliative Measures.—Rest, the horizontal position, postural treatment, as above described, are all of first-rate importance. The warm hip-bath, temperature 100° or even higher, is to be recommended. Copious vaginal injections of hot water are sometimes found very serviceable. Ether, compound spirit of sulphuric ether, camphor, and henbane are ordinary and very useful remedies. Gin and water is a common domestic remedy. Poultices with laudanum sprinkled over them, hypodermic injections of morphia, turpentine stupes, are other remedies occasionally employed. Suppositories containing opium or morphia are very effective, but the use of opium is not advisable unless under strict medical orders. Chloral and bromide of potassium are good remedies. Guaiacum (Dewees), black hellebore (Meigs), have been strongly recommended. Colchicum, cannabis indica, and in fact every sedative and anti-spasmodic in the pharmacopœia, have been employed for the relief of the pain with more or less success.

[For severe dysmenorrhœa I have frequently found Hayden's viburnum compound of great service, given in teaspoonful doses every hour for three or four hours.]

During the menstrual period great care is required that the bowels be kept regular, that the digestive organs be in an easily working condition, and that food be adequate but not in too great quantity It should be known that it is dangerous to use cold baths during menstruation.

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Poor Appetite
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Anemia
Loss of Flesh
Nervous Irritability
Muscular Weakness
Ill Health

Gray's Glycerine Tonic Comp.

Good Appetite
Improved Digestion
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Better Nutrition
Richer Blood
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Steadied Nerves
Strengthened Muscles
Recovery

"The benefits from Gray's Glycerine Tonic Comp. often follow day by day with what is almost mathematical progression."

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The effect of the yeast treatment on uric acid excretion

An interesting investigation of the effect of fresh yeast on uric acid excretion in normal persons has been recently conducted and reported upon. (See Journal of Laboratory and Clinical Medicine, May, 1922.)

THE yeast cakes were eaten before meals by two men and two women subjects. One ate 3 cakes a day for ten days. Another ate 3 cakes for six days, then 6 cakes for four days; the third ate 3 cakes for three days, 6 cakes for three days and 9 cakes for four days; and the fourth ate 3 cakes for three days, 6 cakes for three days, 9 cakes for three days and 15 cakes for one day.

The daily diet was similar to the conventional "purine free" diet based on eggs, milk and cheese except that it was found desirable to include a vegetable salad in the noon meal. The same food was eaten every day. Approximately forty calories per kilo were provided and the weight of the subjects remained constant throughout.

The uric acid in the urine was determined by the colorimetric method of Folin and Wu. Hydrogen ion concentration was done by the colorimetric method using methyl red and thymol blue as indicators. Total nitrogen was determined by the Kjeldahl method.

The experiment was divided into four periods—a fore period when no yeast was eaten—a yeast period—and two after-periods when no yeast was eaten. "There was no significant change in the values for uric acid in any of the subjects throughout the experiment," comments the scientist.

This result seems remarkable when one considers that for certain periods three of the subjects ate twice the therapeutic dose of yeast, two ate three times the dose and one ate five times the dose.

The summary states that "there is no evidence of an increase in uric acid excretion following the ingestion of the recommended therapeutic dose of live yeast."

The Fleischmann Company feel that this investigation proves conclusively that the ingestion of yeast does not increase uric acid excretion, and that, therefore, the advantages of yeast therapy are safely open to the nephritic and to those suffering from gout.

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COMBINES the delightful qualities of effervescence with the well-known digestive properties of Peptenzyme.

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in gastralgia, nervous and fermentative dyspepsia, flatulence, atonic indigestion, and to relieve the gaseous fermentation that usually causes so much discomfort in digestive disorders.

It is palatable to the nth degree and gives the physician a cooling and refreshing beverage, free from any hint of medicine, yet pregnant with therapeutic value.

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FORMULA	
Each fluid ounce represents:	
Rhubarb	20 gr.
Berberine (Alkaloid from Golden Seal)	10 gr.
Sodium Bicarbonate	10 gr.
Pancreatin Glycerole	8 min.
Cinnamon	10 gr.

Summer brings its burden of digestive disorders, Diarrhoea, Dysentery, Indigestion, Cramp Colic, Constipation, Hyperacidity, etc. To meet these conditions the physician must administer an antacid, an astringent, a hepatic and intestinal tonic, and precisely these qualities are combined in the ingredients of Alkarhein.

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DR. WALLACE CALVIN ABBOTT

1857-1921

The American Journal of
CLINICAL MEDICINE
Dependable Therapeutic Fact for Daily Use

Vol. 29, No. 7 July, 1922

Dr. Wallace Calvin Abbott, 1857-1921

ON the fourth of this month, one year will have passed since Doctor Abbott, the founder and long-time editor-in-chief of THE AMERICAN JOURNAL OF CLINICAL MEDICINE, rested from his ceaseless labors of many years. During this year of readjustment, we have never ceased to miss Doctor Abbott and to be conscious of the empty space that he left.

Not that we should wish to recall him, or that we would want to reimpose upon him the burdens that he laid down: We are carrying on as well as it is in us to do so. We work along the lines that Doctor Abbott initiated, keeping in mind his unceasing optimism, his never-ending sticking to it, his unvarying pursuit of those ideas that he conceived to be right. Doctor Abbott's memory will remain green with us as long as we live.

For A National Health Week

THERE is a deliberate agitation being conducted against the medical profession and the allied healing agencies, which already has done great injury, particularly to physicians and to those who serve the public through the intermediation of physicians. We need refer only to the plausible, if often misleading, claims made by the adherents of the various drugless cults for proof of this agitation existing. Quite recently, a deliberate advertising campaign was (and is still being) carried through by the Chiropractic school which uses printers' ink in enormous quantities to promote its claims of the merits of adjustments; the adjustments being usually made in that direction as to adjust the money from the patient's pocket to that of the Chiropractor.

With its usual disregard of hostile attacks and with its customary adherence to the business in hand, which is that of attending sick people, the medical profession has remained almost quiescent under the vicious and virulent attacks that are launched against it. Here and there, occasional popular articles appeared in print, but no organized effort has ever been made to show to the public just what the medical profession and its cooperative and allied healing agencies have accomplished for the benefit of the human race and, incidentally, also for the domestic animals. To be sure, presidential addresses delivered before various medical societies contain references to such work. Isolated publications, written in a popular style, are available, but their dissemination has been altogether too localized to accomplish much general good.

It is a lamentable fact that the public, today, does not appreciate the immense amount of good which has accrued to humanity through the research of medical scientists; the sacrifices of physicians; the discoveries of pharmaceutical and organic chemistry, and the development of laboratory science. What do our school children, or the general public, know about the triumph of medical science over yellow fever; what do they know of the discovery of anesthesia, the developments along biologic lines, and the triumphs of American chemistry? Why, it is true that even many doctors still think that the best medicinals come out of Germany. What is the reason for all this ignorance and apathy, on the part of the public, toward things medical? We believe the answer is, lack of education, lack of information, lack of advertising, publicity, propaganda, or whatever else you may wish to term the absolute absence of any effort to acquaint the public with the facts they should have. What is going to be the result? The public must either be educated if the physician is to prosper, or his patients will all drift to patent medicines, the chiropractor, or the drugless practitioner.

Laws can not stem the tide. Publicity is the one remedy which is most needed at this time. Some large pharmaceutical houses are spending large sums of money in advertising to the public, to create confidence in their particular lines. We are frank to say that we do not believe that such sums are well spent. We do believe, however, that a national campaign of advertising to create confidence in the family doctor would pay. Nothing of this kind has ever been attempted. It is high time that something should be done. For obvious reasons, one society, one journal, or one small group of medical men could not undertake a movement of this kind, neither could one institution or one group of manufacturers. Such a campaign must be nation-wide and should be participated in by every association, every firm, every publication, every society and all agencies which have the welfare of the doctor at heart. And, in the last instance, the welfare of the doctor means the welfare of the patient.

We believe, in fact, we are convinced, that a unanimous campaign proposed by the medical profession and fostered by all its various branches and subbranches would be productive of much good. In this campaign, the efforts of physicians should be supported by dentists, nurses, hospitals, as also by manufacturing chemists and by druggists. It should receive the support of all medical societies and no less of the government medical services.

We propose that such a campaign shall be inaugurated to find its climax in a NATIONAL HEALTH WEEK which might be held during the first week in 1923 or at any convenient period. For that occasion, printers' ink would have to be used generously and freely. Articles setting forth the accomplishments of medicine in all its branches and, no less, the accomplishments of American chemistry in so far as the preparation of drugs is concerned, are to be prepared. It is to be shown just what has been done, not only in the way of curing the disease but, still more, in the direction of preventive medicine. The victories over yellow fever and over ma-

laria point out just two instances that should be utilized. The recent discoveries concerning the importance of focal infection, through which much serious suffering has been allayed, form another item.

It is hoped that all existing medical societies can be interested in such a national health week and that they will participate officially. It is hoped further that the medical departments of the government services can be enlisted. We feel certain that the various dental societies, the nurses' associations, the hospitals and, further, the manufacturing chemists, the pharmacists' associations, and so forth, will be eager to lend their cooperation.

Since the greater portion of this editorial was written, we have received assurance of cooperation from various quarters. One association has passed a resolution supporting the idea.

So far, the plans are in the making. CLINICAL MEDICINE has adopted the slogan:

"For a National Health Week."

There is an unbelief which grows out of ignorance, as well as a skepticism which is born of intelligence. - Ignatius Donnelly.

COMMON-SENSE LIVING

Recently, we received a sales letter from a young man who is preparing himself for taking a medical course, partly by following preliminary studies at the University of Chicago and partly by earning money. This young man knows automobiles and is making capital out of his knowledge, by selling automobiles. Speaking of a certain car for which he is soliciting orders, he says: "If we humans functioned as smoothly and were as well adjusted as these marvels are—well, I shouldn't study medicine." We hardly suppose that this young doctor of the future realized what a splendid text for an editorial he provided. Nevertheless, we are grateful to him for his unintentional kindness.

If we humans functioned as smoothly and were as well adjusted as a well-made car or as any well-made and well-kept piece of machinery, not only would our young friend refrain from studying medicine but all of us would never have studied medicine or, having done so, would enter another business.

The sad part of it is that, originally, the human organism was built to function just as smoothly and it was just as well adjusted. Further, it is capable of functioning easily and without friction. It is possible for it to retain its fine adjustment—if only we had sense enough to live in accordance with natural laws and in a sensible manner. By this we do not mean, to live in accordance with the rules and regulations that some pseudo-health-experts preach and proclaim loudly. A great many of the leading health teachings, if carried out, would hasten the visit of the undertaker to our houses. What we do mean and insist upon is, that living in accordance with natural laws means just that; neither more nor less. It means, first of all, eating and drinking foods that are wholesome and that have not been spoiled, or made indigestible, in the process of cooking. It means, taking sufficient time for eating and for digestion. It also means, providing for a proper and adequate removal of the waste matter through bowels, kidneys, skin and lungs.

Food stuffs that are very excellent in themselves may be spoiled and made unfit for consumption through foolish and faulty methods of cooking. First and foremost among these is, the detestable habit of frying all sort of things in butter, or lard, or other animal fats. It was Oliver Wendell Holmes, we believe, who first made the assertion that the frying pan is an invention of the devil. Another way to spoil perfectly good food stuffs is, to indulge in improper combinations; or in eating things when neither time nor other circumstances are favorable for proper digestion; as, at times of bodily or mental stress or fatigue, when other parts of the body require and use up all available blood, so that not enough is left for the work of the digestive organs.

Our self-styled health-experts and, especially, food-experts demand that we "return to nature" by living as animals do, eating the same food stuffs in the same condition of non-preparation. What nonsense! If we lived the same lives that animals live, we might eat the same things in the same manner. However, we don't and we can't.

Still, we might heed some lessons taught us by animals. Not that of slow eating; because most animals eat rapidly and without chewing —excepting the ruminants, and who wants to ruminate? We refer rather to the habit of most animals to rest after having appeased their hunger. By resting, they permit the efficient flow of the blood to the digestive organs that is required for a successful "business of digestion," as the German writers call it. That means, that a hasty lunch or dinner should not be followed by absorbing brain work or strenuous physical work. An adequate period of rest should intervene in order to start the digestive and assimilative processes.

There are many other phases of our daily lives that might be corrected and readjusted in accordance with the laws of nature and by doing which our organs would function more smoothly and with far less likelihood of disturbances. Unhealthy excitement, excesses of all kinds, foolish and useless worries, strains on body and mind and a multitude of other things now serve to throw our functions out of gear and to cause illness of various kinds.

The inscription over the ancient temple of Apollo, at Delphi, "Know Thyself," has been cited many times and for numerous purposes. In one important respect, it means, to our way of thinking, that we should know ourselves physically, as well as mentally and psychically. Physically, in so far as we should determine the exact state of our physical resources, our assets and, no less, our liabilities. That we should find out how close we come to normal physical functioning; where and how we are below normal, where and how we may overcome any existing irregularities or imperfections, so as to obviate them. It means that we should determine, each one for his own individual case, what normal living and normal conditions mean for him. To the physician, a regular physical examination, once or twice a year, is just as important as it is to the layman. Preventive medicine, in all that the term implies, is of value to the physician personally even as it is to the layman. Let us, in our part, regulate our lives along sensible and "natural" (that is, common-sense) lines, even as we urge our clients to do. The result will be, a smoother adjustment and functioning of our "parts," our organs and, consequently, a better working of our mental powers. Our young salesman said "a mouthful." We trust that he will see this editorial which his remarks inspired.

We are so bound together that no man can labor for himself alone. Each blow he strikes in his own behalf helps to mold the Universe.—Jerome.

ŒNANTHE CROCATA

In his instructive article entitled "What Epilepsy Is," Dr. Edward A. Tracy, refers to œnanthe crocata. This remedy is not mentioned in the current textbooks on materia medica and therapeutics, and we have thought it of interest to collate the information regarding it.

Kraemer ("Scientific and Applied Pharmacognosy," 2d. ed., New York, 1920, p. 501) cites Powers (*Pharmaceut. Jour.*, 1911, Vol. 87, p. 296) as follows:

"A common European plant (Fam. Umbelliferæ), growing in wet and marshy places, and even growing in water. The roots, from their resemblance to parsnips, have been the cause of frequent and sometimes fatal poisoning. It has been used with beneficial results for the poisoning of rats and moles. The poisonous property appears to reside in the neutral portions of the petroleum- and ether extracts of the resin. It does not contain an alkaloid. The constituents of the plant, besides considerable amounts of cane sugar, dextrose and lævulose were found to comprise a volatile oil; a colorless crystalline substance, which, on keeping, assumed a purple color; salicylic acid; triacontane; pentriacontane; a phytosterol; a phytosterol glucoside; and a mixture of fatty acids."

King's "American Dispensatory" says that œnanthe crocata (dead-tongue or hemlock dropwort) is far more dangerously poisonous than œnanthe phellandrium, or water fennel. Indeed, œnanthe crocata is considered the most energetic poison of the narcotico-acrid Umbelliferæ.

Pammel ("A Manual of Poisonous Plants," Cedar Rapids, Iowa, 1911) informs us that œnanthe crocata contains œnanthotoxin which is somewhat similar to cicutoxin. Cases of poisoning with water dropwort have been reported by Witthaus and Becker ("Medical Jurisprudence, Forensic Medicine and Toxicology," New York, 1911, Vol. 4, p. 930 and following); also by M. Baume in the *Archives des Maladies Mentales* for 1881, No. 3 (abstract in *Ed. Vet. Rev.*, Vol. 4, p. 1704).

Oenanthe crocata is indigenous in various European countries in swampy regions and along water courses. It is found especially in England, France, in the Netherlands and in some places in Italy. Although the most poisoning part is the rhizome, it has been claimed that the leaves, in fact, all parts of the plant contain its peculiar toxic principle. Pohl (*Arch. f. Exper. Path. u. Pharm.*, 1894, Vol. 34, p. 259) says that he has found only the rhizome to be toxic, having observed that fresh leaves which he secured from Italy were eaten by rabbits without injury. Yet, the toxicity is considerable, it being reported that animals who had eaten portions of the plant succumbed in from one to two hours. A fair number of fatal cases of poisoning in humans also is on record, the accidents having been induced deliberately.

The symptoms of poisoning are mainly clonic convulsions which lead to general prostration and cause death by arresting respiration.

Pohl confirmed the opinion expressed by Boehm, in 1876, that œnanthe belonged to those

poisons that act upon the convulsive centers of the brain similar to picrotoxin. He found that œnanthotoxin is identical with cicutoxin. The œnanthotoxin was isolated by Pohl and studied by him in considerable detail.

To go without—and look as if you like it—is one of the first things to be learned in this world.

LIP READING FOR THE DEAF

One of our correspondents recently suggested that we should urge physicians, having patients who are growing hard of hearing, to advise them to take up lip reading before they become very deaf. This would undoubtedly help in a measure to delay the progress of deafness by relieving the constant strain of listening. Moreover, those who are hard of hearing will learn lip reading much more easily if their auditory sense is not yet entirely abolished.

Most cities of any size have teachers and schools where lip reading is taught and in many public schools special teachers are employed.

Any doctor or patient wishing to learn more about teachers or other helps for the deaf can learn all about the subject by addressing the *Volta Review*, which is published in Washington, D. C.

We have for years received successive issues of the *Volta Review* and have frequently found its contents of great interest. Physicians whose own hearing is no longer very good or who have patients with like difficulty will do well to communicate with The Volta Bureau, 35th Street and Volta Place, Washington, D. C.

THE SURGICAL SEMINAR

In the Surgical Seminar of this issue, Dr. Gustavus M. Blech has inaugurated a plan of teaching surgery by case histories. The method is not a new one and is not claimed to be new. In fact, we have referred to it repeatedly, always with great appreciation. Indeed, we are convinced that the case-history teaching is one of the most instructive methods of imparting information and, at the same time, of making the student think, that it is possible to devise short of immediate personal instruction.

However, the instruction can be successful only if Doctor Blech's readers will take the trouble to study the case histories that he outlines. The value of his department will be enhanced enormously if, in addition to that, numerous readers will take advantage of the opportunity offered and will share in the discussion of the problems presented. In such a way, this surgical department can become a truly valuable one and can be made to serve all those readers of CLINICAL MEDICINE who do surgery (and they are in the majority) in a practical manner.

We shall be curious to see just how many physicians will offer diagnoses and discussions of the cases presented in this issue.

In this connection, we may speak more generally of the active interest that our readers should take in CLINICAL MEDICINE. We are informed constantly by physicians that they like The Journal, that they enjoy reading it, that they derive much benefit from it. While, of course, we are gratified at these expressions of approval, we dislike having the matter rest there. What we should like to see would be, to have our readers take part in the discussions; or originate them, if necessary. We should like them to write to us, if any assertions or declarations are made in any of the articles with which their own opinions are at variance. Nothing serves so well to clear up moot points, problems that are uncertain and dark, as does free and open discussion. We consider every subscriber to CLINICAL MEDICINE as a *possible* contributor, and we should like to have all of the many thousands of them become *actual* contributors.

THE PRINTERS' DEVIL

Dr. F. H. McMechan, of Avondale, Ohio, is well known to all American physicians for his splendid researches in anesthesia and analgesia. He is not only an exact and careful investigator but he is also a fluent writer and journalist.

All the more funny appears to us a trick played him by the printers' devil in *Current Research in Anesthesia and Analgesia*, Bull. No. 21, for May, 1922. On page 18 of that Bulletin, there appears an article, titled, "McKesson Has Interesting Time Anesthetizing Dope-Fiends and Alcoholics." It appears that Dr. E. I. McKesson, who gave a course in nitrous-oxide-oxygen anesthesia for oral surgery, at the Chicago Post-Graduate School of Dentistry, found practically no clinical material ready for the work. Consequently, he evolved a plan of putting up signs in Chicago flop houses which are patronized by alcoholics, drug addicts and other underworld denizens, offer-

ing a dollar for those who would let themselves be used for clinical material.

Doctor McKesson says that the alcoholic and dope addict are usually very difficult to handle; indeed, sometimes their troubles contraindicate the use of gas oxygen. Doctor McKesson was able to prove, however, that everyone of these patients could be successfully anesthetized and held for prolonged operations in the mouth. He continues:

"I doubt if ever a class was presented with 18 dope fiends and alcoholics in two days before, and I want to say, they were the toughest birds I have ever run up against in a clinic. At the same time, from a teaching standpoint, they were the most valuable patients one could have because every one of them exhibited every possible sign of anesthesia and they did so with magnification.

"The students were pleased and I am sure, learned more from the method that was pursued than if normal patients had been secured. Out of a total of 21 patients, only three were normal. There were no failures." [And then comes the funny part in the following article which is added to Doctor McKesson's letter but without quotation marks.—Ed.]

He is survived by his widow and three sons, Seth W. Mason and H. W. Mason of New York City, and J. Karl Mason of Lockport, N. Y.; also three sisters, Elizabeth Browning Mason of Gainesville, Ga.; Miss Anna C. Mason of Washington, D. C.; and Mrs. Charles Richardson of Pittsfield, Mass.

Darn that make-up man! anyhow.

It is not till one is over fifty that one thanks God for every happy face one sees.

THE QUESTION OF DOSAGE

Textbooks on materia medica and on therapeutics still indicate maximal and minimal doses of the drugs that they describe, it being understood that the amounts stated may be administered once, twice or three times in the twenty-four hours. Occasionally, we read that certain drugs should be given at more frequent intervals, say, every two hours or every four hours.

Under ordinary circumstances, or, rather, in the case of medicines that are to be given for long periods of time (drugs that exert a tonic action, for instance) this manner of drug administration may be all right. However, if it is desired to influence the organism definitely and promptly—as may be necessary in emergencies, also in febrile affections in which it is essential to lower the temperature—a far better mode of procedure is, to determine at the outset the optimal dose for the patient at the particular time when the remedy is required. It is a matter of given knowledge, or should be, that the human organism responds differently to like influences at different times and under different conditions. First of all, it is to be kept in mind that drugs are administered in abnormal conditions; that is, when a state of ill health exists; consequently, the dose of a remedy can not be that which has been found effective in the healthy organism.

Further, the crude division into children's doses and adults' doses is quite insufficient for practical purposes, since there are numerous adults in whom even a supposed minimal dose acts markedly, while in others the alleged maximal dose may remain without effect.

In order to be perfectly safe, it has long since been proved to be a wise plan to proceed according to the socalled dosimetric method which originated with the late Professor Burggraeve, of Ghent. In accordance with his suggestions, potent remedies are prepared in standard granules of dosage so small as to be usually harmless, although it may be large enough to exert its physiological effect. Such a remedy is manifestly given most safely in this smallest dose which, then, is repeated at brief intervals until the physiologic action becomes manifest. In "Positive Therapeutics" (Waugh and Abbott, 3d. ed., 1913), the problem is discussed in an instructive manner, and it may be serviceable to reproduce some of the remarks of these authors who were largely instrumental in popularizing Burggraeve's dosimetric method. They say:

"But the question of dosage, when we attempt to dose to effect, is decidedly difficult. It is a trifling matter if we simply read in our books that the 'dose is so and so', and give it; leaving the patient to get better or worse, making no alteration in this dose unless some unpleasant symptoms tell us to lessen it. If, in due time, the desired results have not been demonstrated, we usually drop that drug altogether and take up another one which promises better.

"There is evidently here quite a diversity of views. As a general rule, we advise that a remedy should be given until the first manifestations of toxic action are apparent; then the dose is slightly reduced, believing that the full remedial effect of the drug is best obtained from doses just below those required to induce toxic action. It is becoming increasingly evident, however, that with many, if not all, drugs there is a decided antagonism between the effects of minute doses and those of maximum doses. According to Mays, all drugs are probably stimulant in small doses and sedative in large doses.

"Thus, we have threefold dose-strengths from which to obtain the effects of a remedy, and it is a question not easy of solution as to which strength is preferable in any particular case. We have the stimulant effect from very minute doses, the full constitutional effect from

the physiologic dose just below the toxic, and the sedative effect from the maximum dose, which may be stated as all that can be given the patient without endangering his life.

"When the habit of dosing to effect has been formed, we begin with a minimum dose, one too small in any possibility to do harm, and by rapidly repeating the doses we soon ascertain how much our patient will stand or how much is necessary to produce the effect we desire. This dose once established, it is easy enough afterwards to arrange it for more convenient administration into three or four doses each day."

If somebody hadn't the courage to be stupid now and then, the world would be a terribly dull place.

THE THERAPEUTIC VALUE OF SPARTEINE SULPHATE

Sparteine sulphate has often been recommended as a substitute for or a succedaneum to digitalis in cases in which it is desirable to omit the foxglove preparations in order to avoid cumulative effects. It was originally introduced into the therapeutics of cardiac affections by Germain Sée who claimed that it relieves the heart and pulse, has a tonic action infinitely more marked, more prompt and more permanent than digitalis; has an important regularizing effect upon the rythm of a troubled heart; and accelerates the movements of the heart. These assertions of Sée were modified somewhat by other French therapeutists, and Cushny declared that sparteine depresses the heart, making the rythms slow and the contractions weak, an observation which is confirmed by Sollmann. On the basis of purely clinical observations, Petty insists, however, that sparteine is the most powerful of all heart tonics, claiming that, by substituting it for digitalis, he has repeatedly saved lives. In their textbook on "Positive Therapeutics" (third edition, Chicago, 1913, p. 617 and following), Waugh and Abbott cite the observations of various clinicians in support of the benefical effects of sparteine.

In contrast to this, Hare ("Practical Therapeutics," 18th. ed., 1922, p. 480) states that, in the few cases in which it has been used by him, sparteine failed to be of service—perhaps, he adds, because the cases were desperate and the drug was tried after all the other remedies had failed.

Now come three French clinicians, Prof. J. Minet, Dr. R. Legrand and Doctor Bulteau who, in a communication to *Paris Médical* condemn sparteine virtually without qualification as a remedy whose depressing effect on the heart is serious. They have long been convinced on clinical grounds of the uselessness of sparteine in the management of cardiac disorders. Finally, they undertook certain animal experiments and also experiments in healthy humans and in cardiac patients. In all cases, they found that sparteine lessens the contractile force of the heart, while small doses, such as they are sanctioned by the "Codex" (the French Pharmacopoeia) remained without appreciable action upon the organ. The authors call attention to the fact that this remedy is to be found in the emergency kit of most physicians and that it is resorted to in cases of failing heart action. They "can not think without emotion of the innumerable accidents that might have been avoided, if the broom had not emerged from its humble origin with pretences to glory as an important cardiac remedy."

We have not employed sparteine sufficiently to have a personal opinion in the matter. We are aware of the fact that some physicians use it by preference. We are under the impression, however, that its employment is relatively infrequent, and we should like to know what the readers of CLINICAL MEDICINE have actually observed under conditions of heart disease in which sparteine is said to be indicated. In view of the fact that this very emphatic condemnation of a remedy suggested for serious conditions has been pronounced — conditions when, if ever, we should be able to depend upon our drugs, it is of importance that the question should be settled definitely. The court of last instance in deciding the merits or demerits of a remedy always is constituted by the practitioner of medicine. It is he to whom we have to look for the ultimate decision. To him we wish to submit the question.

EYESIGHT CONSERVATION

A recent communication from the Eyesight Conservation Council of America (Times Building, New York City) calls attention to the disclosures of the selective-service draft, a few years ago, according to which about twenty-nine percent of the young manhood of the nation, between the ages of twenty-one and thirty-one years, were suffering from defective vision. In all probability, the same frequency of defective vision must be assumed to exist in women.

Since defective vision causes incorrect impressions to be made upon the brain, concepts received will, naturally, be defective; in conse-

quence, thoughts and opinions expressed on the basis of what has been seen will be distorted. Conversely, true brain images received because of perfect vision give a proper perspective because of correct impressions and concepts.

The Eyesight Conservation Council points out the only way to correct the alarming frequency of defective vision as consisting in the adoption of corrective treatment early in life. The Council is working unceasingly and untiringly to the end of arousing popular interest in this important work. As physicians, we have the duty to see to it that the children whose vision is defective receive attention. It is clearly within our province to support the teachers in their efforts leading in that direction and to encourage the parents to act promptly upon the advice received from the teachers that their children's eyes require treatment.

The consequences of incorrect vision are numerous and diversified. Its causes also may be several, and it is not only the ophthalmologists but the general practitioners who have the duty to cooperate in correcting faulty vision and, if possible, in eliminating constitutional causes for such imperfect functioning of a special organ

Why are there so many people in the world who consider it their first duty to see that everyone else does theirs?

PREVENTION OF BLINDNESS

The National Committee for the Prevention of Blindness (130 E. 22nd St., New York City) has just issued its seventh annual report which bears witness to the important work that this committee is accomplishing. There are some very pertinent remarks made in this report of which we will cite just two.

"The industrial worker, too, has a part in fixing the death rate and the accident rate, and perhaps quite unexpressed and hardly understood is the knowledge that the fit survive because they keep themselves fit. The 3,000 men and women who lost an eye, each, in the industries of Pennsylvania during the last five years, bear witness to the testimony that goggles and other safeguards are worthy of consideration.

"The united efforts of national, state, and local safety organizations and of the National Committee For the Prevention of Blindness together with the improved conditions under which accident compensation is being administered are tending to reduce eye accidents in the industries, heretofore one of the chief sources of preventable blindness."

It goes without saying that the work of the Committee For the Prevention of Blindness must interest physicians throughout the country and that they should manifest their interest and their sympathy in this particular phase of preventive medicine.

THE SHEPPARD-TOWNER MATERNITY BILL

In an article dealing with some obstetric problems of a country doctor, Dr. G. M. Baker (*Ill. Med. Jour.*, May, 1922) makes some pertinent remarks concerning the Sheppard-Towner Maternity Bill, which are so apropos that we have thought it best to reproduce them verbatim. Doctor Baker says:

"The framers of the Maternity Bill now before Congress evidently had no adequate conception either of the wishes or necessities of the people. Its ponderous machinery could not be put in operation without enormous expense and it would be little less than criminal to add to the already heavy burdens of taxation and in many cases thereby deprive them of the very nourishment they so much need.

"The term, 'Community Nurse' . . . is not to be confused with the term 'Nurse' as used in the Maternity Bill. The privacy of the home should not be invaded nor disturbed but the services of competent help should be made available, when so desired either by the attending physician or patient. Where the patient is not financially able to meet such expense, it should be met by the state as a matter of economy. Nowhere could money be spent more wisely than in safeguarding the life and health of the mother and new-born babe. It is unfortunate, particularly at the present time, that such strenuous efforts should be made to bolshevize the whole maternity question by ignoring the sanctity of the lying-in chamber and home and usurp the functions of the family physician with a political machine.

"'Do men gather grapes of thorns, or figs of thistles?' 'For of thorns men do not gather figs nor of a bramble bush a grape.' No more can be expected the development of sturdy American individual integrity from a home blighted with the breath of socialism.

"The attempt to supplant that confidential relation between the family physician and his patrons, builded upon years of confidence and trust, with mechanical advice administered by a board of political dictators, is un-American and foreign to all those finer sentiments which constitute a major part of good citizenship. The people will be loath to accept state control of their birthright in view of the official incompetency and dishonesty as exemplified during the World War. At a dangerous curve in the road hangs this sign, 'Life is Sweet, Drive Slow.' With the innovation and diametrical changes that are now being agitated and proposed by some of our law-makers as regards the care and treatment of the sick, it might be well to hang in a conspicuous place that same warning, 'Life is Sweet, Drive Slow.'"

In the same issue of the *Illinois Medical*

Journal (p. 388), there is an important editorial article which gives various reasons why we (meaning the state of Illinois, although the same is true for all other individual states) should not cooperate with the Sheppard-Towner Bill. The editorial is based on the purely mercenary and brutally frank dollar basis. However, even if the Sheppard-Towner Bill were transcendentally idealistic and wonderfully beneficial (neither of which is the case, worse luck!) we still should be obliged to consider the financial problems that would have to be solved before the alleged benefits of this bill could be materialized.

The editor's main objection is that the burden of financing such a bill would be distributed unequally among the different states. In other words, the state of Illinois and some other thickly settled states turn over to the federal government huge sums of money of which only very small portions are expended for the benefit of these particular states.

For instance, let us suppose that the sole function of the United States was road building, and that $100,000,000 was annually collected by income taxes, of which $5,000,000 came from citizens of Illinois, but that only $2,000,000 was spent on Illinois roads. It is obvious that Illinois loses $3,000,000 on the transaction, and that the state would be $3,000,000 better off if it built its own roads with its own money.

We are told, if we will appropriate a certain sum, the federal government will give us an equal sum, but this federal money is not really a gift. It is a return of perhaps 30 cents on each dollar of additional federal taxes collected from our citizens to meet the total outlay among the several states. By every such transaction we lose and the majority of the states gain.

This is just one point on which criticism of the Sheppard-Towner Bill could be based. It is an important one and should be considered.

It is much easier to be good when living with people who laugh than with those who always notice when the wind is in the east.

CINEMATOGRAPHIC INSTRUCTION

We have before us a copy of Bulletin No. 1 issued by The Society for Cinematographic Instruction in Medicine and Surgery, the executive office of which is at 105 W. 73rd St., New York City.

The supreme purpose for which the Society was founded was, to raise the science of cinematography in its application to medicine and allied subjects entirely out of the field of commercialism. In this manner it is possible to make this valuable adjunct to teaching immediately available to the individual physician, surgeon and dentist as well as to institutions which have recognized and taken into account this new factor of actual visualization in connection with the teaching of medicine and allied subjects. It is not intended to supersede, but to supplement the present courses of instruction, and, in conducting this work through the Society, it is brought, from a standpoint of cost, within the reach of all. A Member in any part of the country will have the resources of the Society at his command to present any new idea, invention or technic to the profession at large in the most vivid and rapid manner possible, and in like manner he may witness the work of the ablest men in the profession both in this country and abroad.

The Society is working out various courses of study by means of cinematography and has already completed several neurological, surgical, and dental subjects. When the work has progressed further, a central Cinematographic Library will be established for private or group study, and for meetings.

The possibilities and multiple advantages which obtain through this modern method of instruction and dissemination of knowledge, are obvious, and it is the aim and intention of this Society to establish a Cinematographic Academy of Medicine which will be maintained on the same high plane on which it has been presented, and which, with the aid and cooperation of the interested professions, will, it is hoped, be recorded as a progressive accomplishment of our professions in this day and generation.

This work is financed entirely by the dues received from memberships and, as new members are now being admitted, the Society will be glad to receive applications from members of the medical and dental professions. Blank forms of application of membership may be obtained from the office of the Society.

DIMINISHING DEATH RATES IN EVERY PERIOD OF LIFE

A statement issued recently by the Department of Commerce, through the Bureau of the Census, and comparing death rates, by age groups, in 1910 and in 1920 shows that the death rate has become lower in every age group, the most pronounced change appear-

ing in the rate for infants under one year of age which declined from 13,084 per 100,000 (in 1910) to 9,660 per 100,000 (in 1920), a decline of about 26 percent. The death rate for old people above 75 years of age shows a decrease of about 6 percent, being 13,490 per 100,000 (in 1920) as against 14,360 per 100,000 (in 1910). In 1910, the death rate for infants was almost as high as it was for old people above 75 years of age, but in 1920 the infantile death rate was only three-fourths as great as the death rate in old age.

Particularly noteworthy is the decrease from 2,581 to 2,280 per 100,000 population in the age group 45 to 74, a decrease of 12 percent, due largely to much lower rates from tuberculosis, acute nephritis and Bright's disease, organic diseases of the heart, accidents, and typhoid fever.

The general death rate from tuberculosis has decreased, in the ten-year period, from 160 per 100,000 population to 114. The rate from acute nephritis and Bright's disease has decreased from 99 to 89. The rate from accidents has decreased from 84 to 71, and the rate from typhoid fever from 24 to 8.

Society is a good deal like beer, the froth is at the top.

THE SOURCES OF PUERPERAL INFECTION

In discussing "some of the responsibilities of the attending physician and the dangers to the parturient woman and the child of that large class of confinements which from any cause can not or do not have the advantage of a hospital, maternity home, or a trained nurse," Dr. G. M. Baker, of Altamont, Ill., (*Ill. Med. Jour.*, May 1922) says that the unduly large mortality among parturient women or women in the puerperium rests most heavily upon the class of obstetrics just referred to.

Concerning the most important factor of danger, namely, puerperal infection, which still demands an excessive toll, Doctor Baker reminds us that there are three principal sources: the attendant, the patient and the environment. Doctors who attend this class of patients must of necessity make part of their calls with horses. Many times they are wrapped in horse-blankets to prevent perishing from cold. The danger of saturating their clothing with infectious agents is so apparent that the mere mention of it is sufficient. This is only one of the prolific sources from which the doctor's clothing and person may become a source of great danger. This danger is not eliminated by suggesting a change of clothing and a bath before entering the sick room, for there are occasions when the doctor has but a few minutes' time for preparation and a delay would mean the sacrifice of one or both lives. A sterile pack of gown, cap, towels and gloves will in some measure mitigate this peril, but not altogether. We would hardly expect the surgeon to do a major operation under such circumstances with a minimum of fatalities.

The dangers of infection from the person of the patient are many and varied, Doctor Baker continues. It is not an easy matter to keep the alimentary canal from being a source of danger. The constipated condition due to pregnancy is not relieved in all patients by the same measures and, although a proper diet in most cases will suffice, there are others that require strenuous measures, which keep up colonic or rectal irritation and which thereby produce a focus of infection. Numerous observers with large hospital experience have pointed out the dangers of infection from the surface of the body of the patient. A tub bath, especially in the multipara, is positively dangerous if given during or immediately preceding labor. A moist sterile compress may be free from the dangers mentioned but is not entirely ideal.

A pocket of pus in the tonsil, infected nasal cavities, sinuses and gums, have played great havoc with the heart and serous membranes of the joints and tendons and likewise may be the source of infection to the lying-in woman. Many a physician has been accused of the improper care of the parturient woman who developed a fever from three to ten days after confinement, which fever had its origin in some obscure focus which would have been difficult to discover and impossible to avoid. Attending physicians, upon discovering fever, have gone directly to the uterus for its source; fearing that a portion of placenta or membranes had been retained when, as a matter of fact, such retention could do little or no harm if the infectious agents gained no admission.

Doctor Baker admits that the surroundings in the sick room in this class of practice can not be made sterile nor anything approximating it.

It is not unusual for the physician to be ushered into the sick room without any previous knowledge of the nature of the case, to find himself confronted with a well-advanced labor. No time to prepare the patient, no time to prepare the surroundings, but plenty of time to be condemned if the patient does not do well.

Leading Articles

What Epilepsy Is

By EDWARD A. TRACY, M.D., Boston, Massachusetts

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EDITORIAL COMMENT.—If in any disease it is vitally important, for successful treatment, to establish a diagnosis before the disease has developed, it is so in epilepsy. Doctor Tracy shows, in his highly interesting and instructive paper, how it is quite possible to recognize "incipient epilepsy" from the fainting spells, dizzy attacks, sudden pallor or sudden weaknesses of the limbs that may be observed in some children, that recur for months or years, and, finally, give way to typical epileptic convulsions. If these early symptoms are recognized and if the patients are treated promptly and persistently along the lines established by Doctor Tracy, many cases of true epilepsy (or, better, chronic epilepsy) will be prevented.

THE Editor of CLINICAL MEDICINE has asked for a paper on epilepsy and its treatment, and gladly do I acquiesce; for, like the fond mother who never tires of calling attention to her progeny, so I am pleased to bring to the attention of my confreres the fruit of research in that grievous affliction epilepsy. These researches have been given to the medical profession in the necessary technical phraseology. In this paper, I intend to relax a bit and shall strive to interest more by being less technical, less impersonal in language.

The Tracy Spots

The outbreak of the World War found me in Vienna studying nervous diseases. It was my privilege there to choose a course given by Barany,—on the cerebellum. Contact with this great investigator, the observance of his patient method in clinical research, the witnessing of his scientific enthusiasm in such work, was of great benefit later, when, on my return to America, I became interested in a bit of research work myself, namely, the investigation of the reaction that can be seen on stroking the skin with a smoothened tongue depressor. In the fall season of 1914, I was fortunate in getting an appointment as school physician, having to examine three thousand children yearly. This furnished an ideal clinic for some of my researches. For example, it was not difficult, (after a period of puzzling effort) to bring order out of the chaos of reactions to stroking the skin that I witnessed, until happily I hit on the right technic of light stroking. I found that the normal reaction of the skin to stroking (lightly) is a brief-lasting red streak (of vasodilation) followed by a longer-lasting white streak (of vasoconstriction). While engaged in this investigation, I was called to attend an epileptic and was astonished at the intensity of the white streak evoked by stroking the forearm. I noticed also in this case a few white spots on the forearms of this patient and discovered that they were caused by constriction of the blood vessels in the skin involved in the spots. Furthermore, many observations showed them to be chronic in location. These white spots interested me greatly. Dr. E. E. Southard, at that time Professor of Psychiatry at Harvard University (his demise since has been a great loss to psychiatry as he was fecund in fostering research in this branch of medicine) was much interested in the personal report of my findings, and enabled me to speedily confirm their commonness in this disease by the examination of a large number of epileptics in the State Hospitals. After demonstrating to him a case with chronic vasoconstriction spots, at the Psychopathic Hospital, he kindly had the spots photographed there and, in a letter to me, which I treasure greatly, he designates them as "Tracy spots."

Skin Reactions in Epileptics

While investigating, as I have said, the normal reaction of the skin to stroking, I was astonished at the intensity of the white streak evoked on an epileptic. Further investigation revealed a number of abnormalities in reactions to stroking epileptics. The finding of these objective phenomena in epilepsy was a strong incentive to the further study of this disease.

The white spots and the abnormal vasoconstriction reflexes are due to the abnormal ac-

tion of the sympathetic fibers that go to the blood vessels of the skin; for, the vasoconstrictors are sympathetic fibers. Echeverria, a New York professor of Neurology, published a book on epilepsy, in 1870, in which he described a pathological condition of sympathetic nerve fibers found in a considerable number of autopsies performed by him on epileptics. He was a pupil of the eminent French neurologist, Ch. Robin, and his book shows that he was a thorough investigator as well as a gifted physician. His demonstration of the involvement of the vegetative nervous system in epilepsy marks him well in advance of his time. The white spots and the abnormal vasoconstriction reactions demonstrated by me to be quite characteristic in epilepsy are doubtless the clinical expression of the pathological condition of sympathetic fibers discovered by Echeverria, a discovery modestly announced by him when he wrote "I am not aware of any mention made of such a lesion of the sympathetic as proper to epilepsy."

Epilepsy a Sympathetic Hypertonia

Not a little light is shed upon the nature of epilepsy by a study of these objective phenomena that have been mentioned. The white spots observed upon the forearms or on the face are at times more intense, whiter, and this intenseness is noticeable frequently at a period not remote from an attack of convulsions. The intenseness of the white streak evoked by stroking the skin, with a little instrument termed the vasomotor tester, frequently is seen to be increased before an onset of convulsions. This intensity of white color is due to the over-irritability, hypertonicity, of the sympathetic fibers controlling the contraction of the blood vessels. To compare the reflexes evoked by stroking, a measured stimulus is necessary and this led to devising the vasomotor tester, which is simply a spiral spring into one end of which is inserted a piece of a wooden tongue depressor. When used properly, this instrument evokes a reaction by making a pressure of two and a half ounces. The vasomotor reactions evoked by stroking the skin are as truly nervous reflexes as is the knee jerk evoked by tapping the patella tendon. The phenomena witnessed in chronic epilepsy together with Echeverria's findings make the statement, that epilepsy is a diseased condition of the sympathetic nerve fibers (to coin a word expressing the condition—a sympathicopathy), a simple statement of fact. The fortunate circumstances of being a school physician and of having charge of a clinic for nervous and epileptic children have given me a special opportunity for the investigation of the incipient stage of the disease, the preconvulsive stage. This early stage of the disease is manifested, as Echeverria wrote, by "the whole symptoms of the epileptic attacks being paleness of the face, or loss of consciousness, or vertigo." A considerable number of such cases have been investigated and all showed a hyperirritability of sympathetic fibers (manifested by the intensity in color of the reflex vasoconstriction or by the quickness with which the reaction appeared, as on the face in six seconds in place of twelve, the normal time of reaction), together with chronic white spots on the forearms or the face. The most important of these abnormalities is the sympathetic hypertonia; for, when by drug action it was caused to disappear, the symptoms of fainting spells, dizzy attacks and pallors also disappeared, and the children became well. The beginning of epilepsy, incipient epilepsy, is thus shown to be a sympathetic hypertonia, a real hypertonia that can be demonstrated and witnessed just as a lively knee jerk can be demonstrated and witnessed.

Etiologic Factors

There is a good reason for believing that the toxemias of childhood, especially scarlet fever and whooping cough and measles, play a most important part in the production of this hypertonia of sympathetic fibers. Fright alone may be causative, as is shown by a case report published by me, last year, in *Endocrinology*. Professor Cannon, of Harvard, has shown by experiments on animals that freight causes a hypertonia of the sympathetic nerves, and this supports my finding that the essential cause of epilepsy is a sympathetic hypertonia. In most cases of epilepsy brought on by fright, the sympathetic fibers have already been damaged by a previous toxemia.

The most interesting, because practical, feature about any disease, to the practitioner, is its treatment, its cure. The rational, scientific treatment of a disease presupposes a knowledge more or less complete about that disease. Many chronic diseases, even though we know a great deal about them, are not very amenable to treatment, because irremediable organic changes have taken place. The time to treat such diseases as Bright's disease, tuberculosis, and diabetes mellitus is in their incipient stage, before severe organic change has taken place. And, so, with epilepsy. It is unfortunate that the symptoms of the incipient stage of epilepsy, —slight lapses of consciousness, dizziness, sudden weaknesses, or fainting spells — are not looked upon in their true light as the warning signals of the presence of one of the most fear-

some afflictions; and not till these signals have been slighted for months, in some cases years, are we rudely awakened from our ignorance by an attack of convulsions in our patient, and with their recurrence, the tardy diagnosis of epilepsy is made, after irremediable harm has been done, in many cases.

Diagnosis of Incipient Epilepsy

I have many case histories of chronic major epilepsy in children, which show a period of from six months to two years and during which the warnings of fainting spells, dizzy attacks, sudden pallors, or sudden weaknesses of the limbs were present. While they were noticed, their significance was unheeded. These cases confirm Echeverria's statement about incipient epilepsy. My own researches show that a positive diagnosis can be made in these cases by the objective signs present, sympathetic hypertonia, chronic vasoconstriction spots, and unbalanced vasoconstriction reflexes, all of which signs, and more, are demonstrable in cases of chronic epilepsy. Research further shows that the sympathetic hypertonia manifest in incipient epilepsy can be overcome by the drug œnanthe crocata [see page 470.—Ed.]. This drug, by its action on the vasoconstrictors (tested first on my own) is found to be a sympathetic paralysant. The use of this drug lessens the hyperirritability of the sympathetic fibers, as demonstrated by the vasoconstriction reflexes, and the symptoms of the disease likewise disappear. The use of the drug should be continued for at least a year. I shall reserve the details of treatment of incipient as well as chronic epilepsy for another paper, remarking here only that incipient epilepsy is very amenable to treatment and that it should be watched for by the practitioner; the parents should be advised of the seriousness of the condition and warned of the likely consequences of the neglect of its treatment.

Chronic Epilepsy

In chronic epilepsy, we have not alone a manifest diseased condition of the vegetative nervous system, especially of the sympathetics, but we have also a condition of the cerebral cortex to deal with,—the cortex is hyperirritable. This was clearly shown by Tsiminakis. He compressed the carotids, for one minute, in thirty normal subjects. Outside of a momentary loss of consciousness, there was no reaction of brain cells. He compressed the carotids likewise in 116 patients, mostly epileptics. The epileptics became unconscious more quickly than the normal subjects, at latest in thirty seconds, and the onset of unconsciousness was quickly followed by epileptiform convulsions, struggling or kicking movements for ten to forty seconds; later, these were followed by the characteristic stare of epileptic somnambulance ("Absenz"). These experiments indicate two things: a greater irritability of the motor cells in the cortex of epileptics and the influence of anemia (caused by pressure on the carotids) in provoking an outburst of stimuli from such overirritable motor cells in the cortex, causing convulsions.

In one of my papers reporting research work in epilepsy, I wrote: "Anyone who has seen the intense and long lasting vasoconstriction evoked in some skin area of a chronic epileptic cannot but reflect on the result of a similar vascoconstriction automatically produced in the epileptic's brain vessels" and stated that the intense anemia thus produced could result in convulsions, since Kussmaul and Tenner showed that acute brain anemia caused convulsions. In other words, the diseased vasoconstrictors in the epileptic that produce the visible intense long-lasting vasoconstriction of the blood vessels in the skin, could produce a similar intense vasoconstriction in the blood vessels of the brain and thus be the cause of the convulsions. Le Riche observed the brain in an attack of Jacksonian epilepsy (during a surgical operation, and noted the sudden spasm of the cerebral arteries, inducing immediate and pronounced anemia of the cortex, which impressed him greatly. This observation is important, as it is the only case in which there was actual observation made of the condition of the brain cortex during a convulsion.

Pathological Tissue Changes

Besides the functional hyperirritability of the motor cortex cells in chronic epilepsy, there is a pathological change in the brain tissues. Apert states that there is always present a sclerosis of the neurogliar tissue, an induration of the interstitial tissue of the nervous centers demonstrable by the high-power microscope and special coloration treatment of the tissue examined. This gliosis is progressive, and when it is extensive, what hope can there be for a curative treatment of such a case of chronic epilepsy? As well hope for cure in a sclerosed kidney. Early treatment in epilepsy, when the disease is in the incipient stage, is peremptorily called for by our newer knowledge of this disease.

Psychanalysis Astray

Unfortunately, there has been spread broadcast a pseudo-knowledge of this disease that is productive of great harm. It is taught that "the fit is the expression of the afflicted one's desire to return to its mother's womb"; "the

fit is a regression, a flight into unconsciousness from undue stress"; "the causation of essential epilepsy is dependent upon a primary congenital defect or inheritable defective instinct of natural and healthful adaptations to reality; producing the epileptic makeup or constitution." And conversely, "the epileptic constitution or makeup is manifested by its possessor being unwilling to meet squarely the situations of real life"; he "retrogresses into the unconscious"; in other words, he throws a fit when a difficult situation arises. This teaching is a libel upon the epileptic. The unfortunate afflicted one has no choice. He can as well stop his heart beat as he can stop an epileptic fit. This pseudo-science consisting of verbosity and imagination may be psychological but it is not clinical medicine. It ignores incipient epilepsy, the stage described by Echeverria. Careful clinical observations and case records show that this is the stage when effective medical treatment can be given, treatment that is curative. It ignores the objective signs of epilepsy, chronic vasoconstriction spots, unbalanced vasoconstriction reflexes, and hypertonia of sympathetic fibers. So characteristic are these signs that the disease can be frequently diagnosed by their presence alone.

The teachers of this pseudo-knowledge of epilepsy ignore the therapy of Echeverria, of Gowers, of Turner and others. Like Mrs. Eddy, they ignore the efficacy of medicine and, like her, they attempt to cover their ignorance with a whirlpool of rhapsodical nonsense.

In my next paper, I shall show that there is a scientific treatment for incipient epilepsy, and shall offer a contribution to the problem of the scientific treatment of chronic epilepsy.

The Fatal Ray

By MILES J. BREUER, M. A., M. D., Lincoln, Nebraska

[*Concluded from June issue, p. 431.*]

MRS. DELAND beamed with happiness over her two children. The twelve-year old boy was in the uniform of some voluntary boys movement, which had for its object self-discipline in preparation for the stern responsibilities of the leading citizens of this strenuous age.

The girl was sixteen years old. Her father pointed to a badge she wore, a cherub in blue.

"Estryn just received her badge yesterday. She had chosen the profession of motherhood as her career, and we are very proud of her. It is the most important one there is, and the integrity of our whole social structure depends on it."

I was a little confused, but the girl beamed happily. I finally ventured to ask:

"Has the bearing of children become a specialty then?"

"Not the bearing, but the rearing. If a woman who has no motherhood training has a child, she must either give it up after it is a year old, and see it only once a week or evenings, or she must take the seven years of motherhood training; and if she is over twenty-one, she must pay a fifty-percent increase on her personal tax during these years, having attained a citizen's productive age.

"In your day you did not educate children, you sent them to school and forgot about them; and then you slaved, paying for governments, insane asylums, wars, and courts to patch up your blunder. Today, the State asks no other work of the mother than the training of her children; and that is so important, that it gives her a more accurate and thorough training than it does any other class of producers.

"You lived about the time of the German War. Perhaps you were involved in it yourself. And you wondered if there would be any more wars. There were plenty more, until man found how simple and easy was the way out — not by ridiculously impotent peace congresses, but by training the children. Leblanc, with his International Pedagogic League in 1981, did more for the world than a thousand Peace Congresses.

"It was very fortunate that he came when he did; for the advance of science continued, in spite of political stupidity, and, a few decades later, the destruction of human life was made so easy by the discovery of new forces, that civilization would have been wrecked completely. Today, it is so easy to kill a man, or any number of men, secretly and at a distance, that all laws, governments, and police, such as you had, would be powerless to prevent it or detect the criminal."

I looked interested but incredulous.

"There are many methods. For instance, one of the simplest ones depends on a form of radiant energy known as Sigma Parabolic. Any elongated piece of metal slipped into a wire coil and wrapped in detractive, such as is found on pocket telephones or flashlights,

will electrocute a man at a thousand meters, silently, and invisibly. How can you fight that, except by education?"

"If we had only had it in the Argonne!" I thought; but, fearing that would be lost on the doctor, I merely said:

The Government of the Future

"You spoke as though government had changed considerably. What kind of government do you have?"

"We have no government in the sense that you understood it. With educational changes, the functions of the government fell away until it is now a matter of business management.

"Government? What is government? The care and safeguarding of the welfare of the people, by accredited representatives. Its chief duty is, to look after the people's material interests. That duty was actually fulfilled by the earlier forms of government, when these material interests consisted mainly of protection from enemy peoples. But, in your day, such a danger was slight in comparison with the material affairs of everyday life, which you left in the hands of ambitious and misguided private individuals.

"The world is a group of business corporations, or trust companies. We have no laws. When a matter requires regulation, the entire subject is thoroughly worked over from the beginning, and all previous rulings eliminated; and each year sees rather a simplification than an increase in complexity. Government is administered by an especially trained profession, and offices are filled on the basis of merit. Initiative, referendum, and recall are supposed to exist, but I have never heard of their being used."

All that night, and all the way back to the hospital, the Sigma Parabolic ray was in my mind. Its possession in war and police work would have been of immense value; but, in the hands of criminals, it would have been terrible. Back at the hospital in my room, I wondered if I could make a ray; it was hard to believe that a thing so simple had such power. Perhaps I could find some animal, a cat or rabbit, to try it on.

Coming back to the hospital seemed like coming back home. Somehow, it seemed that I had known Miss Williams a long time. From the fact that she came in to see me as soon as I arrived, and that she held out her hand to me, I fancied that perhaps she too was glad to see me.

"Why shouldn't I be glad to see you? I've taken care of you for two years."

I started almost guiltily.

" You don't mean to tell me that people nowadays have learned to read each others' thoughts!"

"No. We hope to do that some day. All we can do now is to interpret your postures, actions, and expressions. But, people in your day must have been very naive. It is easy to tell what you are thinking about."

"Well," I said, "I'm glad you know it. You don't seem to mind: If you did, this would be a terrifyingly confusing and lonesome world."

In reply, she strapped some sort of an instrument to my head and, as a result of her observations and a conference over the telephone, told me that I would have to lie quietly in bed the rest of the day and take an hour in the field of force.

Dr. Deland's invitation, the next morning, to live with him at his home for the time being, came rather as a shock to me, and I hoped that he could not read, on my exterior, the lack of enthusiasm that I felt regarding his kind offer.

"You are well enough to leave the hospital," he said. "I shall take charge of you and teach you how to live like a modern man while you are convalescing. In the meanwhile, arrangements are being made for you to take your place in the community. As soon as you recover your strength, you will be in demand at the Historical Department of the University. The descriptions of localities of your time, and personal recollections of people, that you can give, will be immensely interesting and valuable. You will be able to straighten out for us a good deal regarding medical knowledge, religious ideas, and similar things of your day. It may be months or years before your usefulness in this line is exhausted. In the meanwhile, you can be training for the occupation for which you are best adapted."

In addition, the doctor informed me that the forty dollars that I had had in the Savings Bank when my anesthetic began, had grown at compound interest, to sixteen thousand, six hundred and sixty-seven dollars. He handed me a bunch of script of metal foil, which he called "tokens" and which would serve as money until various formalities concerning my deposit were fulfilled.

5. Troubles

With money in my pocket, my thoughts reverted with a strange fascination, to the Sigma Parabolic ray. As a preliminary, I determined to go out and buy me a flashlight. You can not imagine the adventurous exhilaration with which I walked out of the hospital and out into the street alone. My heart pounded like a big engine.

Out there, I found a glass roof over the

street, and the rain hammering on the top of it. As it had not been there before, I judged that it must be the same elastic transparent membrane that had covered me when I awoke, and was put up on occasions of rain only. I wandered around considerably before I found what I wanted, but no one seemed to pay any attention to me. I got into what seemed to be a bank, then a dry-goods store, and then what seemed to be a great dining-room, before I finally entered a place with many polished metal things for sale, telephones, fans, little gongs, and mostly things I didn't know the use of. I asked for a pocket flashlight; with some trepidation, but purchased it and learned its use without any trouble. It gave an intense light without any heat, and it seemed that the energy for this purpose was not carried with the flashlight but was drawn by the detractive covering from the radiations in the ether. Such is the personal satisfaction in making a purchase, that I started back to the hospital feeling elated and hopeful.

I wanted another look at the traffic below the moving street, and descended again into the uproar of the lower story. The stream of strangely shaped vehicles aroused the same emotions in me as the never-ending roar and plunge of a waterfall, or the beating of the sea. Some of them carried tremendous loads: To see twenty or thirty tons hurtling along the street on a truck, made me wonder what the pavement was made of to stand such punishment. Everywhere there were machines. Machines carried goods, swiftly and slowly; machines loaded and unloaded; in one place, a machine was tearing up the pavement and digging a hole; in another, a machine was erecting a scaffolding. And each machine was guided by a human being; each one of those grimy, clattering, hurtling things held a man; I caught glimpses of several of them, young, with unshaved cheeks and a sweaty lock of hair hanging over the forehead, and shirt open at the neck; and while his machine performed herculean tasks, the background of his attention was occupied by the girl whom he could see that evening after working hours. Near me, a truck was unloading great, heavy rolls, probably paper for a printing establishment. I could see the machines through the window, and was fascinated by their operations. I saw things that, to me, seemed mechanically impossible. A solid rod reached repeatedly forth, bent itself into a hook, and then straightened out to let the package it had lifted slide into the machine; a line of gears, without axles, or any support or connection other than their intermeshing teeth, rotated busily against each other, and the line bent and swayed; especially uncanny was a row of rods, with no connection other than some electrical wiring, their upper ends stationary, their lower ends moving up and down, punching something on papers; the metal rod seemed to shorten and lengthen spontaneously. It gave me a queer feeling to stand there and watch those impossible things working away quietly and steadily.

I had had the impression that I was standing in a section of the street reserved for such pedestrians as had to come down there; but suddenly I caught a glimpse of a huge vehicle loaded with long poles bearing down on me, and felt a sickening crack in the side of my head. One of the poles or pipes had struck me a blow that seemed to shake my eyes loose and sent a singing through by ears. I staggered to regain my balance, but was struck in the back with something else and knocked flat. I yelled in terror as a towering truck passed within a hair's breadth of me, and not till it had passed did I note that its broad wheel had passed over my right leg, crushing it to a thin layer of bloody pulp, from the knee down. I had the presence of mind to grip my thigh in my two hands and stop the blood that poured from the severed arteries. Then a sinking, sickening realization came over me. Already at a disadvantage in this terrifying world, I was now to be a cripple. I grew so violently discouraged that I relaxed my grip on my thigh, determined to allow myself to bleed to death and be through with it. By that time, a shouting had arisen, people were running toward me, and a bell was clanging.

"It's the yipe that slept," I heard someone shout. Then I grew so swiftly weak that everything became blank, and I was glad it was all over.

There was a long, comfortable period of emptiness; then things began to come back to me, the salesman and his anesthetic, the infected finger, then the wonderful new Lincoln, and then my leg crushed to a pulp in the street, and I groaned.

"Are you awake?" asked a soft familiar voice. I opened my eyes and groaned again. I was in my little green room, and my nurse was busy with the strange apparatus.

"You're not in pain, are you?" she asked.

"Physically I am very comfortable. My pain is mental. I wish they had let me die."

She stood a moment, and then smiled.

"You're a wonderful pessimist. *I* am glad that you are alive and well, very glad."

"Now, look here," I said. "You've been kind to me, and I think you are the most noble and high-minded girl I ever met. But you can not afford to let yourself become involved with a cripple, who is useless in this world anyway. I am crazy about you, but I can't stand for that."

Leg-Grafting

Suddenly, a light seemed to break over her face, and she threw back her head, and said "O!" She came up to my bed and threw off the cover. I had two legs and two feet, and the right one had a dressing around the middle of the thigh. I stared, wondering if I had merely had a nightmare; but it slowly dawned on me that the right foot and leg were not my own; that they were larger and darker-skinned than my left, and the toenails were rounder. I pinched the strange leg, but felt nothing. Dr. Deland came in, probably summoned by the nurse.

"Is it, or isn't it mine?" I demanded.

"It is yours now," he replied, and from him I learned the whole story: My own leg was lost, and this was another, skilfully joined and sewed on. The soft tissues were already united, and I would have to wait two weeks for the bones to knit firmly under the influence of osteoblastic stimulants, while nerve regeneration would take the longest, as it meant the growth of a new nerve down the entire length of my leg. He told me of the vacuum refrigerators, where all bodies and parts of bodies undergoing non-toxic deaths were preserved and used in emergencies like mine; and later, when I got around in a little automobile wheel chair, I visited it.

"So, I am not a cripple!" I gasped, and lay back on my pillow. I must have fainted or fallen asleep; for, when I awoke, the doctor was gone, and I was holding the hand of Elite Williams, who sat by the bed. I was very much confused by my recent and numerous shocks, and I stammered: "I beg your pardon."

Love-Making in the Future

"Oh, never mind," she laughed, "you've been holding it for two hours."

I seized her hand in both of mine, held it to me and kissed it. Now, when she is only a memory, whose very reality I doubt, I still feel a lonesomeness steal over me when I think of her. She did not object in the least, and smiled down at me. However, it seemed to be rather a smile inclined to be a little perplexed, than one of pure happiness.

"I'll tell you why," she said. Again that astonishing reading of my thoughts, which the people of that age insisted was only guessing from acts and expressions. "I'll tell you as soon as you are stronger."

"Make it right now," I said. "Nothing can be a shock to me; I've been through too much."

She turned her eyes on me, till I thought that under her gaze my heart would jump into my mouth—a queer expression for a medical man.

"I'll tell it to you. You and I are beginning to love each other. You have not been rated, and I am so afraid that your badge will not be purple."

"You seem really worried about it," I replied, "but it doesn't worry me. It might if I knew what it meant." I had more difficulty in understanding her, for she had not read up on early 20th century history, and could not get my point of view. But finally I got the information straight. Each person is rated with respect to hereditary characteristics, and given a color-badge. She showed me her purple cross (I remembered that the doctor's daughter had had a blue cherub; the form of the badge depended on the occupation). In order that undesirable characteristics might be weeded out of the race, only persons with the same color badge could marry each other, except in cases where they cared to permit themselves to be sterilized by means of x-rays, in which case they received a white badge. There were not many of these. There were seven other colors, so arranged that desirable dominants would overcome undesirable ones, and desirable recessives would reinforce each other. By this method, the human race had not only eliminated most of its insanity, feeble-mindedness, syphilis, tuberculosis, congenital anatomical deformities, but had purified itself of many physical and mental traits, which, though not actual disease, were a source of far more individual suffering than the deprivations imposed by the marriage regulation.

Nosology of the 21st Century

Dr. Deland came in to finish the explanation, and I was moved to ask him about other diseases. I learned that he had never seen a case of smallpox or of typhoid fever, and knew of them only as literary curiosities; though the organisms of both were cultured in laboratories. Cancer, he said still worried them, though they succeeded in preventing or curing a considerable percentage. They considered it an infection, not with an organism, but with a form of activity which was a property of a protein molecule; they called it biodyne. He mentioned many diseases consisting of non-infectious inflammations of paren-

chymatous organs, which were unrecognized in my day, and several which actually seemed to be new diseases. One was supposed to be produced by the numerous forms of radiant energy, lately utilized. It was characterized by tremors and a skin rash, and progressed to a catatonic condition. Another, ascribed to the nervous pressure of the complex life, had, in its benign form, dissociations of personality and retrogressions, and, in its malignant form, a metabolic conflagration like an exaggerated hyperthyroidism. The new artificial foods were supposed to be responsible for an affection characterized by puffy joints and failing visions. There were many new industrial accidents and intoxications.

Biologic Rating

It seems that my sojourn in the Lincoln of the late twenty-first century was a series of violent shocks, many of them unpleasant. My examination for my biological rating took place about four weeks after my accident. During that time, I was not outside the hospital, but I traveled around considerably inside of it in my auto chair. Among other things, I managed to pick up, in one of the laboratories, a coil of wire for my Sigma Parabolic apparatus; but I was afraid to put the things together. I got considerable practice in reading the phonetic writing and the high-tension literary style of the day. The daily news I could get by turning a certain switch on the telephone, but I could not understand it, and desisted. Of Elite, I saw comparatively little; but, when I did, she was always frank, and faced the issue squarely. Evidently, the young ladies of the time were well trained in the handling of dangerous fire.

My rating examination took several days. They apparently had careful records of my family, before and after my generation; and I went through an amazing course of physical and psychic tests. Incidentally, I learned that I was only imperfectly adapted for the practice of medicine and, ideally so, for pure scientific research. I came out with a blue badge.

The men in the office were impassive to my downcast looks as they handed it to me; but she knew it at once when I came back to the hospital, though the miserable piece of blue celluloid was deep in my pocket. She had been waiting anxiously for my return; she smiled at me, but her eyes looked like a light shining through a rain.

"What color?" she finally said. I held up the badge.

"Blue!" she exclaimed; "one of the highest ratings."

She seemed philosophically resigned. I was murderously resentful; but they had me, and they were stronger than I. I couldn't even squirm.

"Can we continue our friendship?" I asked.

"Oh yes. There is nothing against that, except possibly that it may be difficult for you. Dr. Deland has been talking to me and he says that in your day, people had no training in handling their emotions. We are used to this and know how to sublimate it."

The Climax

Then came the next shock. For two days, I wandered restlessly about the hospital and the streets. The one little light I had had to guide my gropings in this teeming, terrible world, had suddenly been snatched away from me. Elite tried to be kind to me, but did not say much. Then, on the third day, she looked in the door at me, and then stepped in. Her hands were clenched on her chest, her breath came fast, and some deep anguish showed in her face.

"I overheard them in Dr. Deland's office." She wrung her hands. "Perhaps I am doing wrong. What will become of you?"

"What has happened?" I was dumbly accustomed to knocks.

"Dr. Deland has a visit from the Chief of Police. They say you will have to go to a special school; that you can not be trusted at liberty in the community until you have had a proper education. They said that the people in your time were barbarous, murderous, and ignorant, and that you are already planning murder. They seem to be afraid of you. Oh, is it true? What has made them think it?"

"Such an idea never entered my head!" I protested. It flashed on me that they must suspect that I am interested in the ray. The cleverness with which they ascertained it seemed uncanny.

"But what terrible thing is to happen to me? I haven't done anything. A school? I'd like to go to school."

"But they will shut you up and keep you there, like they do retroverts. Adults do not train like children—"

That dawned on me, too. It was a sort of prison before the crime—to prevent its taking place.

Her fear began to infect me. I paced around the room. I didn't feel that I belonged in this world. I grew panicky and lost my head.

"They are coming!" she panted, looking down the corridor. I dashed out. She tried to prevent me, saying sadly:

"No. That won't help."

But I was already half way down the corridor, in a direction opposite from the approaching group of men. I got on the automatic elevator, rode to the top, and left the door open so that they could not follow me up. I found myself in the same tower from which I had first viewed the city, and I fled out on the roof. There, feeling myself rapidly growing desperate, I ripped the detractive cover from the flashlight, slipped my knife into the wire coil, and rolled it up, with the button for making the contact on the outside, on one end. A couple of men appeared at the door of the little balcony, but seeing what I was doing disappeared immediately. That fanned my bravado.

"I'll show 'em!" I thought. An aeroplane came toward me from the swarm in the distance. The aeronaut shouted at me.

"Throw it down, or I'll spink your spool!" He must have spoken through some kind of an instrument, for his voice sounded very near. By way of reply, I pressed my button, pointed the thing at the plane, and swept it around a circle. I couldn't see the man, but the machine suddenly turned on its side, and plunged downward like a knife, grazing the corner of the building with a sickening crunch, and disappeared from my view. Two other approaching aeroplanes immediately whirled around and fled. I trembled from head to foot.

"They can't get me, but what will I do here? I've fixed myself for good, and they probably can see every move I make."

In a moment, another aeroplane came toward me. I turned my ray toward it and swept it around and back, but it had no effect. The machine approached rapidly, making directly for me. I noted that it was only a small affair, about three feet long, with no one in it. As I dodged, it continued for a moment, and then swerved toward me. Then there was a flash of purple, a loud report, and a stabbing pain through my head.

6. Little Old Lincoln

I had fainted and been knocked unconscious so many times, that it was getting familiar. The strange thing about it was, the ease with which I passed from one existence into the other. While I was unconscious, it seemed a thousand years; but, when I opened my eyes, it seemed that only a few seconds had elapsed.

But, here I was on a white bed in a white room. Dr. Penrose stood in the door watching me. Outside, I heard the clang and rumble of a street-car and the buzz of a Ford horn. A newsboy shouted shrilly:

"Star or Journal, Mister? Read about the turrible Omaha murder!"

"How long have I slept?" I asked in an irritated tone of voice. "And how did I get this nasty bump on my head?"

"That bump is a puzzler," the doctor replied. "You must have done it when no one was watching you. But that was some anesthetic you bought. Three drams of it kept you asleep for thirty-six hours."

Chemistry of Phosphorus in Brain Activity With Illustrative Cases*

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PHOSPHORUS in combination with soda serves the physiological economy in three distinct processes: (1) In connection with the digestive functions, the trisodic phosphate is acted upon by the hydrochloric acid and converted into (2) a disodic monohydrogen phosphate, which is the true alkalinizer of the body fluids and tissues. A high state of alkalinity is essential to perfect oxidation and assimilation. (3) After the disodic monohydrogen phosphate has served its purpose in the body, it is excreted through the kidneys, where it meets a molecule of uric acid and is transformed into the acid monosodic dihydrogen phosphate, the true acidifier of the urine.

Phosphorus is found also in combination with calcium, magnesium and potassium, the soda and calcium combinations being the most important. Phosphorus also reaches the body fluids and tissues in the form of lecithin, nucleoalbumin, nucleic acid, phytin, etc. Phosphorus enters plant life as a phosphate to be synthesized into these highly complex bodies.

The author's contention for years has been that oxidation-reduction takes place in the fixed cells *only*, as found in the various body glands, and not in the body tissues and fluids; and that this process constitutes, in a large measure, the

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biologic activity of the body cells. In connection with these oxidation-reduction processes and the exact place where they occur, it should be remembered that the ganglion cells of the nervous system are large masses of protoplasm resembling, in composition but not in shape, the cellular structures of the glandular organs, and that, in all probability, they are the place at which the complex phosphorus-bearing bodies are oxidized and reduced.

The reasons for this interpretation are, that these protoplasmic masses are very abundant in the central nervous system; that these phosphorus-bearing compounds are found in larger amounts at this point than in any other part of the body, and that there seems to be a decided generation of impulses originating in the central nervous system which control and regulate the automatic balance of the human system—a condition which could not be maintained if the nervous energy were due solely to reflected heat energy brought to the central nervous system by the centripetal nerves and reflected out again by the centrifugal nerves. Active working of the central nervous system is always accompanied by increased elimination of alkaline phosphates, which fact tends to support the theory that these phosphorus-bearing bodies are oxidatively reduced in the cells of the central nervous system. Hence, increased elimination of the alkaline phosphates indicates simple augmented physiological activity of the nervous system; while overelimination of earthy phosphates in a highly acid urine denotes a malnutrition involving chiefly the nervous mechanism.

The answer to the question as to how these complex phosphorus-bearing bodies can be converted into energy and phosphates, and how they pass out of the system is plain if the theory be accepted that the protoplasmic masses of the central nervous system have the power to oxidatively reduce this class of bodies. Assuming that the nerve cell possesses this power, lecithin, for instance, is *here* reduced to a phosphate of soda, urea, carbon dioxide and water. Or phytin to phosphate of soda, water and carbon dioxide.

It is recognized that bone deficiency is not due to a lack of lime salts or bone-producing elements, but to disturbance of metabolism which prevents fixation of the calcium salts. In the reduction of the phosphorus-bearing molecule, it is reasonable to suppose that, for an instant, the phosphorus atom is free and exerts this oxidative stimulating action upon protoplasmic masses, thus generating an inherent central nervous impulse, which not only augments the cell activity *per se* in which this change occurs, but is reflected to all parts of the economy by the nerve fibers springing from the cells.

So far as known to the author, the production of disodic monohydrogen phosphate from these complex phosphorus-bearing compounds is a newly revealed fact, and gives to the physiological economy an inherent source of this absolutely essential body alkalinizer. How much is produced in this manner daily, is not known.

The foregoing abstract of my original paper shows clearly why phosphorus can be utilized by the physiological economy only when in pure organic combination. That is, that there is no acid within the animal economy sufficiently powerful to liberate the phosphorus when in combination with any other inorganic substance. It is true that the disodic monohydrogen phosphate is changed to mono-sodic dihydrogen phosphate by the uric acid. But, in this instance, both the uric acid and the phosphate are *outside* the system. They are *excretory products.*

From these facts, we have a right to expect definite results when a phosphorus atom is administered in a *pure organic combination,* as illustrated by the reported cases.

Another reason why the results are so pronounced is, that the modern refinement in the production of our food products has largely deprived our systems of their natural supply of mineral salts and phosphorus in organic combination.

Case Histories

Mr. H.—act. 40.— Mr. H. came under my care in April, 1921. He is a baker, has always worked very hard, and has not eaten the right kind of food. About two years ago, he commenced to fail in health and developed a cough. He finally developed tuberculosis. He went south for two winters with rather unsatisfactory results, living largely on fruits and vegetables, and experiencing no benefit from the change of climate. Last April, he came under my observation in the second stage of tuberculosis of the lungs, verified by tubercle bacilli in his sputum.

I placed him on a well regulated, mixed and balanced diet, one in which the nutritive elements were chiefly drawn from the animal class rather than the vegetable. He was in a very highly nervous condition, troubled a good deal with indigestion, and very much constipated. Eating produced so much disturbance that he soon developed a nervous spasm; so much so that, when I first saw him, he was almost

afraid to eat. He was treated for indigestion and for constipation regularly up to about eight weeks ago. I also gave him anhydrous glucose, about 2 ounces a day. He steadily improved and, eight weeks ago, I sent him some phytin tablets, 5 grains each. For some reason or other, he stopped all other medications (which I did not intend to have him do) so that, for the past eight weeks, he has taken nothing but anhydrous glucose and phytin.

About the first of December, 1921, I received from him the following letter:

"The white tablets must be helping me more than anything we have done so far. I notice that the nervous system is getting much more stable, digestion is better, tongue cleaner, heart action much better, and I am also able to consume more food. In addition to this, there is an increased sense of well being, and a great change for the better in my endurance. However, the cough and expectoration still continue."

During the first week in January, 1922, I received this letter:

"My tablets are all gone now, but I am very glad to say that I continue to feel good; my bowels and digestion give very little trouble, and I really feel better than I have for nearly two years. I even withstood holiday dinners without any ill effects."

Mrs. O.—act. 52.—Mrs. O. has been under my care for nearly a year. She has been a hard-working woman all her life. She began to have disturbances with her uterus and rectum. She went from doctor to doctor and had herself x-rayed, but no one seemed to discover anything positive the matter with her. She says, it was examination after examination, and that was all it amounted to. She came under my observation about nine months ago, suffering with the intense fear of believing that she had a cancer of some organ in the body. She was very much constipated and nauseated, had recurring attacks of vomiting, a very serious degree of indicanuria, and suffered from very large overproduction of uric acid. In general, her assimilation was bad, as shown by my metabolism test. She was also suffering from an unbalanced diet. I treated her for constipation and overproduction of uric acid. She improved rather slowly. Finally, she began to have a little more confidence in herself, less nausea and vomiting, but still suffered a great deal of general neuralgic pain. About three months ago, I placed her on the phytin tablets, one 5-grain tablet four times a day. Since taking these, she has very decidedly improved. She rarely is nauseated and does not vomit. Bowel action is better, and she is feeling decidedly better in every way. While she still has a good deal of neuralgic pain, she is eating well, and her indicanuria and overproduction of uric acid have practically entirely disappeared.

Severe Trauma in Old Woman

Mrs. S.—act. 83.—On December 16, 1921 Mrs. S. was knocked down by an automobile and her left leg very extensively crushed, so far as the soft structures were concerned. No bones, however, were broken. She suffered intensely from shock. When I first saw her, about half an hour after receiving the injury, it looked as if she would die within fifteen minutes or half an hour. She was pulseless at the wrist and in a very bad condition. Under the influence of alcoholic stimulation and hot drinks, she slowly rallied from the primary shock. A thorough examination of her injuries in conjunction with what could be learned as to how the accident occurred, lead me to believe that the wheel of the automobile knocked her down and passed upward between the legs, hitting first the inner side of the right heel, then striking the inner side of the left leg, causing a long contusion involving the inner side and upper third of the leg up to the knee. The most extensive injury, however, was a very large contusion located just above the knee upon the inner and anterior part of the left thigh and extending nearly to the pelvis. Upon the outer and posterior portion of the left leg and thigh, there were found four other contusions, the superior one about over the trochanter. The patient complained also of being very sore directly across the abdomen between the umbilicus and the lower end of the sternum. Careful examination of this region increased the pain when pressure was made. No evidence of any contusion was found, but a few days later a black and blue line developed directly across the abdomen at the seat of the pain previously noted. From this, Dr. Samuel Lloyd, who saw the case in consultation, agreed with me that this portion of the body was also struck by some part of the automobile. From this time on, the course of the case proved a most interesting study; but it terminated as I feared it would from the very beginning. By the second day after the injury, a large hematoma had formed in the left thigh which, in all probability, at its height was composed of two or more quarts of blood and serum, while in the other contusions smaller hematomas formed. Aside from the traumatic injuries, Mrs. S. was in a perfectly normal condition.

Urinalysis indicated that there was no organic disease of any kind. The digestive functions were being perfectly performed. The urine, however, gave evidence of some faulty

assimilation and an abnormally large over-elimination of earthy phosphates which, if continued, would have resulted in a depletion of the alkali reserve and a socalled acidosis from this source would have speedily developed.

For this latter condition, she was given 5 grains of phytin, four times daily. She was also given remedial agents to maintain her digestive functions as perfectly as possible and to overcome the tendency to faulty assimilation. The phytin was given for its energizing effects upon the nervous system and to maintain a high alkalinity. At this point, it is well to note that phytin is not a nutrient substance, as are the proteins, any more than are the carbohydrates and fats, nutrition being effected solely by a perfect utilization of the purely protein substances. Without the perfect utilization, however, of the carbohydrates, fats, and phytin the proteins can not be perfectly utilized; the one class being energizers and the other, in conjunction with the inorganic salts, constituting the structure builders.

Under the influence of the phytin, the over-elimination of the earthy phosphates was speedily arrested and remained so throughout the course of the disease.

At first, there was no temperature and the pulse beat was slightly above normal.

For the first week, the patient suffered a good deal of pain, but it gradually decreased until she was free from pain except when the injured spots were manipulated. There was, however, throughout the whole course of the reparative stage of the injuries, great nervous irritability and a tendency to insomnia for which somnifacients had to be administered in varying quantities.

The appetite was poor and alcoholic stimulants had to be administered continuously to keep up sufficient heat energy to maintain the physiological functions.

The patient progressed so well that, by the last of December, she was able to stand on the injured leg and was also able to walk a few steps.

From the first of January, 1922, to the sixth, there was a slight elevation of temperature, the maximum point reached being 102.5° F. This apparently was due to a rapid breaking down of the blood clot in the hematomas and slight putrefactive fermentation in the intestinal tract.

From the time of the injury, the progress had been exceptionally good; so much so that Dr. Lloyd remarked on several occasions that the patient was doing unusually well for so severe an injury at her age. At the same time, we both realized fully what the final outcome might be.

From this time (January 6th), while the injured parts continued to improve, the nervous system began to give evidence of breaking down. The memory failed and, at times, the patient was very irritable and, unless steadied by somnifacients, was very noisy.

From the 12th of January on, the patient steadily failed, and she died on the 23rd of January, 1922, on the thirty-ninth day after the injury.

The case is of interest showing as it does the wonderful vitality and recuperative power of the patient at her age.

Had it been possible to maintain a better appetite and utilization of food, she would in all probability have recovered from the injury. Had the accident not occurred, the patient would in all probability have lived to an advanced age.

The fact so well known in this class of injuries, that the nervous system frequently breaks down just as recovery appears to be well in hand, and prevents recovery, was clearly shown in this case. This was what I feared from the first.

That the phytin did its work well to the very last, was clearly shown by the changes in the urine which was examined daily from the day of the injury. It was not until the fourth day before the patient's demise that the urine indicated that rapid dissolution was about to occur, which was indicated by albumin appearing and the dead-line change developing as evidenced by the metabolism test.

Mrs. L.—act. 40.—Mrs. L. first came to consult me in September, 1921. A business woman who had been very much overworked and whose nervous system had become malnourished. She suffered from acute constipation and faulty assimilation. Under a well regulated mixed and balanced diet she steadily improved. She also was placed upon phytin tablets. About two weeks ago, she told me about some peculiar headaches which she had suffered from for many years and for the relief of which she had used various remedies. One of these attacks coming on, she thought she would try one of these phytin tablets, and to her surprise it gave her more and quicker relief than anything she had ever used. She has used the phytin several other times with the same speedy results.

Mr. B.—act. 27.—Mr. B. first came to see me in December, 1921. He was an overseas soldier who was very much overworked while in the army, although he came back from France weighing more than he had ever weighed be-

fore. Since his return, he has lost weight, strength and ability, and has suffered repeatedly from recurring colds. When he came under my observation, there was positive evidence of faulty assimilation, overproduction of uric acid and overelimination of earthy phosphates. He was placed on a well-regulated diet and medication to remedy his indigestion and assist assimilation. I also gave him the phytin tablets. A month later, he made the statement that he noticed his legs were much more stable. When he was on his feet, he could control them well, which had not been the case for some time past.

Nervous Breakdown

Mr. A.—act. 46.—Mr. A., an insurance broker, has been under my care during the past year. He had been very much overworked. About two years ago, he had a regular nervous breakdown, with a tendency to a mental obsession, from which he partially recovered. He was so well that he returned to business, but shortly thereafter he again broke down and for a time was mentally quite unbalanced.

When he first came under my observation, he had certain obsessions to which he stuck pretty vigorously, thinking he was the worst man that ever lived. At that time, while he looked fairly well, he had decided indicanuria, faulty assimilation, overproduction of uric acid and also overelimination of earthy phosphates.

Under a well regulated diet and medication, he steadily improved and came to my office regularly two and three times a week. His mental condition was so much improved that at times he seemed to be perfectly rational. If one had not known that his mind had been disturbed, one would hardly suspect anything of the kind. He, however, began to worry about affairs and his mental condition again grew worse. He also was constipated and had a poor appetite. Since taking phytin tablets, which he has been doing for the past two months, his appetite has very decidedly improved, his bowel action has become more nearly normal and, while there has not been so large an improvement in his mental condition, his whole facial appearance has improved and we live in the hope that ultimately he may possibly recover from the mental obsession.

Of course, the time is too short for a case of this kind to show any conclusive results. We should expect at least six months before he could recover.

Diabetes and Mixed Diet

Mrs. N.—act. 50.—Mrs. N. has well defined diabetes, about 5 percent glucose in the urine. Aside from the glucose in the urine, she shows evidence of slight malnutrition and a slight overelimination of the earthy phosphates. Otherwise, she appears to be well, but is losing weight; which worries her. Contrary to the accepted theory on diabetes, I placed her upon a well regulated mixed diet in reasonable quantities and, for the last three months, have given her anhydrous glucose, about 2 ounces per day. Her general condition has improved, there has been a slight increase in weight, and a slight decrease in the amount of glucose eliminated through the kidneys.

She has been given the phytin tablets, because I believe that this remedy improves the nutritive condition of the brain and the whole system, increases the nerve energy in the brain and produces a more normal balance of the whole physiological economy.

In addition to the anhydrous dextrose, Mrs. N. has taken from one to two bottles (24 ounces each) daily, of liquor calcis et sodæ phosphati compositi (Kalak Water). This was given to maintain a high degree of alkalinity which is essential for the most perfect oxidation reduction of the fats and proteins. It also prevents the possibility of a so-called acidosis condition developing from depletion of the alkali reserve.

By the use of the anhydrous dextrose, we maintain a sufficient supply of the carbohydrates to prevent the development of the so-called acidosis condition as a result of too largely depleting the carbohydrate supply.

In this case, the output of glucose in the urine has diminished. Taking the night and morning samples separately, in the beginning they contained an equal percentage of glucose. As the weeks progressed, the amount of glucose eliminated during the night fell off one-half. The last examination indicated the presence of 2.8 percent only of glucose in the total output for the day.

If the vicious circle which constitutes the glycosuric or diabetic condition has not existed too long, it will in many instances disappear entirely under this plan of treatment. In my opinion, the glucose and phytin are large factors in bringing about the good result.

This plan of treatment is based on sound physiological and chemico-pathological principles.

In this connection, it might be interesting to state that Mrs. N.'s husband (nearly 60 years of age), who was a very highly nervous man and feeling rather miserable as a result of this nervous condition, without any change in his

diet or any medication at all, was induced by his wife to take one of these 5-grain tablets of phytin four times a day. To her surprise and that of many of their friends, it was noticed at the end of two weeks that he was quite a changed man. He was very much less nervous and looked better in every way. For that reason, I am inclined to believe that the phytin tablets did improve his general condition and stabilized his whole nervous system.

Mrs. D.—act. 55.—Mrs. D. was a very interesting case of profound malassimilation and nervous exhaustion, with slight indicanuria, slight overproduction of earthy phosphates.

She was placed upon a well regulated diet and general medication; also phytin tablets. She very steadily and continuously improved. She suffered a slight attack of grip, but recovered rapidly from it.

Mrs. S.—act. 60.—Mrs. S., a china decorating artist, who had been compelled to work far beyond the limit which the physiological economy ought to incur, last spring suffered a complete nervous breakdown, and had to give up her work entirely and rest.

Under a well regulated diet and medication she steadily improved, and for the last month or six weeks has been taking 5 grains of phytin four times a day, with decided evidence of stabilization of her nervous mechanism.

Mr. G.—act. 62. This is a most interesting case. About thirty years ago, Mr. G. stepped into an elevator shaft and fell to the basement, breaking several ribs, his ankle, and sustaining injuries to the stomach, causing temporary glycosuria.

Ever since then, his nervous system has been much more irritable than it was before, and especially during the last five or ten years. He also complained of lack of nervous energy and that his nervous system was easily fatigued. This is in line with the well known fact that, after a very serious injury of any kind, the nervous system is apt to be more irritable, and may give way suddenly from time to time.

He has been taking phytin tablets for the last month, and it is entirely apparent that his nervous system is strengthened and more stable in its influence upon the physiological economy.

Mrs. W.—act. 60.—Mrs. W. taught in the public schools of New York for over thirty years, until finally she suffered a condition of almost complete nervous exhaustion, especially in reference to her ability to mentally concentrate.

She has been taking phytin tablets for the past month, and, while far from well, seems to be improving under the influence of the remedy. She too had an overelimination of earthy phosphates, which has gradually disappeared.

Mrs. R.—act. 35.—Mrs. R. came under my care early in November, 1921. She was a complete nervous wreck, without a pain or an ache. On the other hand, she was obsessed with the idea that she had a bad heart and that she was going to die in consequence thereof. She also complained of intense and distressing sensations, apparently emanating from the solar plexus, the nature of which she could not describe. She was decidedly constipated and suffered greatly from flatus.

The urine indicated a marked indicanuria, faulty assimilation by the metabolism test, and a decided faulty nutrition involving principally the nervous system.

Under the influence of a well regulated and balanced mixed diet, with suitable medication to overcome the constipation and the indicanuric condition, she steadily improved. She has forgotten all about her heart, but continues to have highly nervous spells and periods of extreme weakness.

About the middle of January, 1922, she was given, in addition to her regular medicine, about 2 ounces daily of the anhydrous dextrose and 5 grains of phytin, three or four times daily. At the end of a three-weeks' period, she expressed herself as being very much improved, and as feeling well. This statement was fully confirmed by her looks and actions, and by the findings in the urine.

Mrs. Y.—act. 40.—Mrs. Y. came to consult me in October, 1921. She was very much run down in health, and suffered severely from rheumatic neuralgic pains in various points of the body. Some of the smaller joints were at intervals swollen and painful, a condition which I regard as a rheumatic neuralgic state. The urine gave evidence of the existence of a toxic indicanuria, faulty assimilation, and a large overproduction of uric acid of the toxic type, as described fully in my book entitled "Eating to Live Long."*

Besides the above-mentioned symptoms, Mrs. Y. had a very severe pain, which was almost continuous, extending from the occipital bone and down the back of the neck, in the right side, extending down the back to just above the waist line. It also ran down the posterior and inner side of the arm to the elbow.

She was placed upon a well regulated, mixed, and perfectly balanced diet. She was given remedial agents to overcome the indicanuric condition, to improve the assimilative func-

*Porter, William H. "Eating to Live Long" Fred Reilly and Lee Co., Chicago, Ill. 1920.

tions, and to arrest the overproduction of uric acid of the toxic form.

She steadily improved in every respect. The severe pain in the back of the neck, back and arm, however, was very slow in yielding to treatment.

About the middle of December, 1921, she was given 5-grain tablets of phytin. The last of January, I received a letter from Mrs. Y.'s husband stating that "the tablets (phytin) had done his wife a world of good."

Summary

In all the recorded cases, each patient was given from 1 to 2 or more ounces, daily, of anhydrous dextrose (exhose) for its ready absorbability and action without the expenditure of any digestive energy. By the use of this chemically pure dextrose, we secure, more quickly than can be done in any other manner except from alcohol, the normal supply of heat energy from the carbohydrate class of foods. This in turn results in a more perfect oxidation of the fats and proteins, thus avoiding any possibility of the socalled acidosis condition developing from a deficient supply or an imperfect utilization of the carbohydrates. With the phytin, we prevent a development of the socalled acidosis condition from a depletion of the alkali reserve of the system. For these reasons, the two should be given simultaneously, thus preventing all possibility of a socalled acidosis state.

The following quotation from a letter, recently received from one of my patients, indicates what is thought of the value of chemically pure dextrose: "The sugar (dextrose) has done wonders for me, and, if by any circumstance it must be discontinued, I know I shall retrograde, for I am much stronger because of it."

This and many similar remarks regarding the chemically pure dextrose, like the foregoing regarding the phytin are further proofs that the two should always be administered simultaneously if the best results are to be secured.

In my opinion, these two preparations are the most *scientific* and *practical* ever presented to the medical profession and to the public. When their true value is fully recognized, they will in a large measure revolutionize the treatment of disturbances in metabolism. Chemically pure dextrose, in my opinion and in that of scores of my patients, should displace the use of cane sugar in all culinary usage. When this is done, it will prove to be the greatest health saver and preventive of pathological conditions discovered up to the present time. Not because it is a new substance, but because it has been made practically available, and we know with scientific accuracy just how to use it in conjunction with phytin, and the exact results that can be obtained.

Hot Radium Springs

With Special Reference to the Waunita Springs in Colorado

By CHARLES GILBERT DAVIS, M.D., LL.D., Chicago, Illinois

THE healing art is as broad as the universe. All is good for man when properly applied. Every created thing has its place and purpose in the great process of evolution. This proposition is found true whether we argue from the viewpoint of theology or follow the logical deductions of science. The real practice of medicine is bound by no school, no cult, no narrow walls of belief; but reaches out and grasps and utilizes all knowledge, all wisdom, all creative force, material or psychical, from the center of the earth to the farthest fixed star, for the uplift and health and happiness of humanity.

Since the dawn of history, man has been delving into every department of nature, searching heroically for the great panacea that would cure all his ills and endow him with perpetual youth. In his search, he has been largely led by a deep and abiding idea that the interior of the earth itself contained that mysterious something that would bring life, happiness and health to the inhabitants of the earth. With this attitude of mind it was quite natural that his attention should be turned to the great and numerous springs gushing from the veins of this nourishing mother.

So, for thousands of years, mankind has made use of mineral waters, both hot and cold, not only for the cure of various diseases but also for the pleasurable reaction following the application of the bath. Long before chemistry had advanced sufficiently to give man an idea as to the composition of the waters, the profound faith in their healing qualities was based on the idea of the presence of some mysterious power. Even in Holy Writ, we read how the Great Physician told the blind man to go and bathe

his eyes in the pool -and, lo! he could see. The knowledge of the wonderful cleansing and purifying effects of water, when applied to the human body, undoubtedly led to the suggestion that it should be used for baptismal purposes in cleansing the soul from sin. Go back as far as the dawn of history, and we find man seeking the bath. The Egyptians, the Hebrews, in fact all ancient peoples, had their public and private baths. Many of these were held sacred and the bathing of the body was often accompanied by occult and religious ceremonies. A great deal of the medicine used by the ancients consisted of these waters. Perhaps the most enthusiastic bathers in the world were the inhabitants of ancient Rome. Here the acme of human happiness was found in the tepid waters of the pool. From the emperor down through the nobility to the humblest plebeian, all sought rest, recreation and health in the mysterious life-giving waters.

Distribution of Healing Springs

It will hold as a rule that, whatever is good for the inhabitants of the earth, nature has distributed wisely and well. Hence, we find springs, and especially hot springs, pretty much all over the earth. They are more numerous, however, in the mountain regions than in the valleys. Many of the springs of Europe have been famous for centuries and there has grown up around them great architectural wealth and beauty with all modern advantages and improvements essential for the purpose of utilizing the waters to the best advantage. In the past, European watering places have enjoyed the greatest reputation of all others. But recent and careful scientific investigation has made clear the fact that there are no mineral waters in Europe but what can be duplicated, both in point of chemical ingredients and quantity of out-put, in the springs of the United States.

Many have been the theories as to the cause of the temperature of thermal springs. The ancients attributed it to the fires of the gods. Later, some scientific dreamers have told us that the heat was simply the remains of the fires that enveloped our globe when it was a glowing molten mass gradually evoluting into form. Others even suggest today that the temperature is due to the stress or contraction of the different strata that collide with one another as the earth cools and contracts. Some have intimated that it might be due to some form of chemical action. Sir William Ramsey, a few years ago, advanced the theory and stated that in his own mind, after a thorough investigation, he was satisfied that hot springs owe their temperature to the disintegration of the radium atom.

This seems the most feasible of all explanations.

Radium Springs

And this brings us to the subject of radium springs in general. Ever since the discovery of radium by Madam Curie, some twenty-five years ago, advanced the theory and stated that this element as a valuable therapeutic agent, diligent search has been made for waters containing this substance. Consequently, radium is found in mineral springs in greater or less quantities almost all over the civilized world. England, Germany, France, Austria, Russia, Japan and the United States, all possess springs with more or less radio-activity. Undoubtedly, the presence of radium in mineral springs, either as emanation or permanent activity, has had much to do with the many remarkable and mysterious cures that have occurred while using these waters and which could not otherwise be accounted for by the many other chemical agents present.

This remarkable action of mineral water containing radium has been especially characteristic of the WAUNITA HOT RADIUM SPRINGS, of Colorado. We have many legends handed down from the early history of the continent relating the wonderful cures made among the Indians who assembled here for their councils, named the springs Tomichi (boiling water) and brought their sick and crippled to be cured. Many years later, during the territorial history, the white man came and the explorers, hunters and trappers bathed in these tepid waters and cured their rheumatism. Later came the gold excitement and the prospectors sought relief in these baths and many are the stories still repeated telling of the wonderful cures. There remain many evidences of the primitive structures where these people piled up rock across the streams to form temporary pools. The story is repeated to this day of the great efficacy of certain ones of these springs which were noted for their healing qualities. It is worthy of note to relate that the very springs considered most valuable then in healing the sick are now by scientific examination found to contain the greatest amount of radium.

These springs are located in Gunnison County, Colorado, in a little valley surrounded by foothills and within sight of many lofty peaks of the Rocky Range. There are two groups about half a mile apart. Altogether, there are something over three hundred springs. Only fourteen have so far been analyzed. The temperature ranges from 125° to 160° F. There is one

large cold spring with a temperature of 42° F.

It is well known, there are many things in the environment of a watering place that may add materially to the restoration of health. For instance, the scenery, the atmosphere, the temperature of the air, good food, regulation of the diet, social surroundings, freedom from business cares and, last but not least, the psychic force generated by the suggestion arising from the efforts to restore health. All of these combined arouse faith, hope, expectancy and belief, and in that way assist in creating a feeling of well-being which in turn promotes nutrition. But, when a full measure of credit is allowed for all these adjuncts to the restoration of health, we still find in the history of many springs strong evidences of the existence of some unusual healing force that raises their reputation for curing disease far above that of many watering places which to the casual observer possessed apparently similar chemical properties. Such has been the record of Waunita.

Evidently, there is a great variation in the different springs at Waunita as to their chemical composition, but the following analyses will give a fair indication as to the properties of those so far examined:

Chicago Laboratory Analysis of Cold Spring, Waunita, Colorado

Ammonium Chloride	(NH_4Cl)	0.0072
Potassium Chloride	$(K\ Cl)$	2.2189
Sodium Sulphate	(Na_2SO_4)	13.3478
Sodium Nitrate	$(Na\ NO_3)$	0.1201
Sodium Nitrite	$(Na\ NO_2)$	0.0014
Magnesium Bicarbonate	$(Mg(HCO_3)_2$	3.2928
Calcium Bicarbonate	$(Ca(HCO_3)_2$	5.7274
Aluminum Oxide	(Al_2O_3)	0.8745
Ferric Oxide	(Fe_2O_3)	
Silica	(SiO_2)	1.1077
		26.6978

RADIUM { Emanation per liter x 10^{10}, Water 13.85. Permanent Activity grams per liter x 10^{10}, 0.085.

Mary Estelle Spring

Ammonium Chloride	(NH_4Cl)	0.0017
Potassium Chloride	$(K\ Cl)$	1.5688
Sodium Chloride	$(Na\ Cl)$	1.0995
Sodium Sulphate	(Na_2SO_4)	15.1591
Sodium Nitrate	$(Na\ NO_3)$	0.0176
Sodium Nitrite	$(Na\ NO_2)$	0.0014
Sodium Bicarbonate	$(NaHCO_3)$	5.1447
Calcium Bicarbonate	$(Ca(HCO_3)_2$	2.8637
Magnesium Bicarbonate	$(Mg(HCO_3)_2$	1.8358
Aluminum Oxide	(Al_2O_3)	0.2332
Ferric Oxide	(Fe_2O_3)	
Silica		0.6996
		28.6251

RADIUM { Emanation per liter x 10^{10}, Water 28.57, Gas 687.5. Permanent Activity, grams per liter x 10^{10}, 0.083.

Hiawatha Spring

Curies Ra Emanation per liter x 10^{10}, Water, 21.51; Gas, 1280.

Therapeutics of Radium Springs

The main object of this paper is not to theorize but to state facts. The healing art is not yet an exact science and often, in our professional work, the results we obtain are attributed to causes far removed from the real truth. And, yet, when many times we get like results under identical conditions, we must believe that we are working along scientific lines. *Radium undoubtedly has a marked destructive action on virtually all forms of pathogenic bacteria.*

Tonsillitis

M.C., a young lady, eighteen years old, arrived at the springs suffering from severe sore throat. An examination revealed enlarged tonsils with inflammation and suppuration. She was given a glass of radium water to drink every two hours and instructed to gargle frequently with the water hot from the spring. In twenty-four hours, the inflammation had subsided and, the following day, there was no evidence of the disease. No medicine was given but a mild laxative. This is only one illustration of many cases of the same kind.

Conjunctivitis

S.W., forty-five years of age, had suffered from sore eyes for two months. He had taken much medicine internally and used innumerable eye waters, but had received no benefit. Examination revealed severe inflammation with granulated lids. He took the water, a goblet every three hours, day and night, and bathed the eyes frequently with the water as hot as he could apply it. In one week, the eyes were still sensitive but the inflammation had subsided. In another week, he announced himself well.

Malaria

A number of cases of malaria coming from Texas and other southern states have been treated at the springs. The following is typical of many others:

J.C.L., from Oklahoma, aged thirty-five, had been suffering from intermittent malaria at intervals for three years. He had the characteristic yellowish complexion, splenic enlargement, congested liver, and related the usual story of quinine, whisky, etc. For the last month, he had had his chill every forty-eight hours, with accustomed regularity. He was anemic, emaciated, weak and thoroughly discouraged. In order to completely saturate the system with radium as quickly as possible, he was given a goblet of water from the Mary-Estelle every three hours, day and night, and, at the same time, allowed to take ten-minute inhalations of radium emanation from the Minnehaha three, times a day. No drugs were administered. His improvement was almost miraculous. There were no more chills, his appetite returned, he gained in flesh and strength and, in two weeks, pronounced himself cured and went on his way rejoicing. The following year, he made another visit to the springs and had all the appearance of splendid physical life. There had been no return of the malady.

Rheumatism

J.C.F., brakeman on railroad, was brought to the springs in a country wagon. He had been ill three months and the trip over the mountain roads had increased his suffering. The joints

all over his body were more or less swollen and very painful. He was at once placed in the hot bath and ordered a glass of water every three hours. The improvement began at once and, in a week, he was on his feet. In three weeks from the time of his arrival, he danced all night at the County Ball. Scores of cases of this nature could be related without exaggeration.

Chronic Rheumatism

Col. D. B., aged fifty-five, had suffered from chronic rheumatism for ten years. He had a long history of improvement and relapses and was quite skeptical as to any relief that might be promised. He was six weeks under the treatment, taking the hot baths followed by the wet pack and, at the same time, drank freely of the water. His diet was restricted to fruits, vegetables, fresh milk, etc. Heavy proteids were forbidden. For the first two weeks, his improvement was very slow; after that, he gained rapidly and, at the time of his departure, felt that he was cured.

Gastric Ulcer

Mrs. E. P., aged forty-six, came to me suffering from "stomach trouble." For more than a year, she had been in a gradual decline, having grown very weak and lost in weight till she was reduced from 158 pounds to 135. She complained of pain in the epigastric region, which was increased after taking food and continued for an hour or two. There were frequent attacks of hematemesis and the strength was so reduced that she could scarcely walk. A family physician had suggested that she was suffering from cancer and, owing to this diagnosis, she was much discouraged and very much inclined to refuse all medical aid. Finally she was persuaded to try the radium water. When she arrived, she could only walk a few steps at a time.

She began the use of the water by drinking a glassful and taking a short walk with the aid of a nurse. This she did for three hours in the forenoon, then slept during noon-time and repeated the same procedure in the afternoon. Again, at bed-time, she drank a glass of hot water and another in the morning on awaking. Under this system of radium treatment, with a diet restricted to milk, she made rapid progress toward recovery. In two weeks, the amount of radium water was gradually increased till she took twenty glasses in twenty-four hours. It was not difficult to imagine the effect of this warm soothing fluid passing into the stomach and over the raw ulcerated mucous membrane, washing off the morbid secretion and stimulating the cells to renewed vitality. At the same time, the kidneys, the liver, the intestinal canal, the blood and all the tissue of the body were flushed and brought in contact with the radium element and emanation. It is unnecessary to add, she was entirely restored to health.

H. S., a young woman aged twenty-four, was sent by a physician recommending an operation for gastric ulcer. She had been ill for several months and complained of the usual symptoms of pain, vomiting, hematemesis and distress after eating. After a thorough examination, there was no doubt as to the correctness of the diagnosis. She went through the usual treatment of baths, drinking the water, dieting, etc., and was cured. She is now married to an able physician and enjoying health and happiness.

These two cases are given as an example of the curative properties of the water not only in gastric ulcer but as illustrating its action in many diseases of the gastrointestinal tract. We have seen cases of cancer of the stomach wonderfully relieved by the same treatment.

Neurasthenia

That numerous class of unfortunate individuals designated as "neurasthenic" has long been the *bête noir* of the medical profession. Without physical evidence of organic disease, their complaints are unlimited and they drag through the years, the prey of patent-medicine venders and the victims of cults. Their trouble is due in all probability to a deficiency of vital force. In no class of patient, have we seen more brilliant results from the application of radium than while treating this case of distressed humanity. The cures can not be attributed to suggestion or psychic influence. Many of these cases we have treated by daily administering the radium emanation water intravenously. Within a week, the dejected countenance of despair is transformed with the smile of hope. Lost ambition returns, the man who has withdrawn from business plans new ventures in the commercial world, the appetite is restored, a few pounds of flesh are added and the victim of insomnia rejoices and boasts of "the long sleep he had last night."

Gallstones

If radium water does anything in a direct manner, it certainly has a specific effect over the intestinal canal and bilious tract. We have seen so many cases of clouded complexion, with jaundice and other evidences of gall-bladder trouble, not only relieved but cured at Waunita, that we have almost come to rely on it as a specific in these cases.

Mrs. J. A. C. had been under the treatment of three physicians and, in consultation, they told her husband that there was no hope except in surgery. She was brought for operation. She was advised to go to Waunita and see what it would do. The gallstone attacks occurred almost daily and her suffering was terrible. Warm radium baths were taken daily for a week, to relax the system as thoroughly as possible; then, for two days and nights, a glass of radium water was given every three hours. At the end of that time, a dose of physic was administered and she passed ninety-one stones. She presented us with half of them. We have them yet. She keeps the rest to exhibit to her friends. That was two years ago. She has had no return of the trouble since and has gained twenty pounds in flesh.

How can we account for it? It is not known that the water has any dissolving action on the

stones but, perhaps, its beneficial effects may be due to the fact that the radium cures the cholangitis and lessens the swollen condition of the mucous lining of the tubes, relaxing the muscles so that the caliber of the tube is enlarged and the stones pass out without pain.

Neuritis, Rheumatoid Arthritis

These diseases have yielded more readily to treatment since we have instituted the mud-baths. Much of the soil around the springs is a soft black loam. As this is saturated with the emanation and has also permanent activity, it is reasonable to suppose that it could be utilized in this manner. This is a delightful method of treatment and all patients undergoing it are loud in their expressions of relief immediately after the warm application is made to the entire body. It is a question how much radium is absorbed by this method of administration or whether any at all is taken up through the pores of the skin. But, certainly, the application of the hot mud is beneficial and, during the mud-bath, the patients drink freely of the hot water. In this way, the radium finds its way from the intestinal canal into the general circulation and is distributed to the entire system, dissolves the uric acid deposits, stimulates the glandular system and is finally thrown off through the skin and other organs of excretion. This is probably a rational explanation of the therapeutic action of the mud-baths in giving an immediate relief in these diseases at Waunita.

Syphilis

We are not yet prepared to announce radium as a cure for syphilis but, as an adjunct to the usual treatment, we are sure that it is more than an equal of any other remedy. Patients at Waunita, under treatment for this disease, make better and more satisfactory progress than under any other conditions. The secondary symptoms, especially the skin eruptions, are quickly removed, alopecia is arrested, the blood shows an improved corpuscular count, and strength and vigor rapidly return. This may be due to bactericidal action but probably more to the action of the radium in stimulating the leucocytes to increased vigor and in promoting phagocytosis. In ordinary practice, in treating syphilis, giving the usual arsphenamine treatment, on examination after the first course, the Wassermann test will frequently still show a positive reaction in about one in five cases. We have treated many patients with radium spring water and have never had a positive Wassermann after a first thorough course. We hope to see these experiments carried farther and, in all probability, there will be new developments in relation to the action of radium in this disease.

Anemia

One of the most vivid expressions of the therapeutic efficiency of radium water we discover when contemplating its effect on the blood. No matter whether we have an excess or a deficiency of corpuscles, the use of the water has a tendency to restore normalcy. In anemia, especially, it has produced quite satisfactory results. We have had many cases of this disease and have taken special pains to make blood counts before and after treatments. Many patients with a blood count of 3,000,000 or 3,500,000 gave blood count of 5,000,000 after four or five weeks' treatment.

Gastroenteritis

Under this heading, we may properly include all irritations or inflammatory conditions of the intestinal canal, not omitting ordinary indigestion. In all cases, the water acts as a sedative and at the same time gives tone to the function of the organs. The irritation or inflammation is arrested, digestion is improved and peristalsis is restored to normal. This water is not a physic but, when constantly used for some time, it produces normal daily excretion. Infants suffering from cholera infantum, prostrated with constant vomiting and purging, when brought under the influence of the water, are relieved almost immediately. In these cases, the water is administered in extremely small doses, sometimes a teaspoonful every two hours. Two cases of chronic pancreatitis were cured after six weeks' treatment.

Nephritis

Under proper diet and a vigorous use of the baths and drinking the water, the results are quite satisfactory. In these cases, great relief is obtained from the hot baths, while the wonderful eliminating action of the mud baths by reducing the dropsical condition hastens recovery.

Tuberculosis

I am satisfied that radium is of wonderful assistance in treating tuberculosis when not too far advanced. It is especially useful in what we may term constitutional cases when we have a condition of "poor health" and tuberculosis symptoms in various organs or tissues of the body.

R. F. came to the springs, suffering from "spinal trouble," unable to walk without crutches or assistance, pain and tenderness in the spine, with slight daily temperature. Had been treated for progressive paralysis. Laboratory examination of the blood gave T. B. positive. He was given mud-baths, drank ten glasses of the water daily, hot radium-water bath once

daily, and put on good supporting diet. In two weeks, he was riding a broncho and, in one month, he climbed a mountain eleven thousand feet high. In five weeks, he returned home. No pain in the spine; could walk and run with perfect ease; gained ten pounds of flesh. Laboratory examination of the blood gave T. B. negative. This man is probably not entirely cured and, yet, he has no symptoms. His case is of importance to report in relation to the effects of radium on constitutional tuberculosis.

Skin Diseases

Eczema and acne and other forms of skin diseases are remarkably benefited by the water.

Infantile Paralysis

A. J. D., 7 years old, paralyzed in both limbs, muscles wasted, unable to walk across the floor without assistance; had worn all kinds of braces and supports. All mechanical appliances were removed. She took the hot radium baths and drank freely of the water. There was marked improvement the first year (seven years ago) and she has returned every year since. She has constantly and wonderfully improved. At present, it is difficult to notice any deficiency. No drugs were given her and no braces allowed. She goes to dancing school and dances well.

How about this case? Radium and perseverance.

Some of our pathologists say that there is no medicine to restore loss of nerve tissue. Sir William Ramsey, just before he died, said that there was only one remedy in the world that would restore nerve tissue and that was radium.

The Action of Radium

How can we account for the action of radium? For, after we have given due allowance to climate, altitude, ozone, other constituents of the water and all hygienic environment, there is still a large margin of credit that we must extend to the new wonderful element, radium. We are yet unable to fully explain the mechanism of its action, for the very good reason that we are not yet fully cognizant of the full mystery that surrounds this element. Again, with all our boasted knowledge, we are still ignorant of all the underlying forces of vitality and life itself. A full understanding of the basic principles upon which the healing art should rest has not yet been reached. We are wandering in the twilight of our knowledge. We behold some of the symptoms of disease and mistake them for the reality. There is something back of the localized disease which we must discover, thoroughly comprehend and command before we can call ourselves masters of the situation. A man is ill, not with tuberculosis, Bright's disease or cancer, but he has a deranged mechanism back of this; perhaps his glands of internal secretion or something beyond them, probably his psychic reservoir. Whatever this something is, radium finds it, touches it, revives it and, lo! the man is well. This explains why we so often are accused of using radium in opposite conditions. Radium cures obesity and at the same time we administer it to the emaciated to make them gain weight. Radium will reduce high blood pressure and it will raise the pressure when it is too low.

Engineers have a little instrument which they attach to the machinery to regulate the movement of the wheels. If the movement is too rapid it slows them down, if the wheels lag in their movement, it urges them forward. They call this little machine "the governor."

This reminds us of radium. It is a governor of the vital mechanism. All disease is either excess, deficiency or perversion of the mysterious life force. Radium is the governor. The world brain is crippled from alcohol, nicotine and a few other poisons. Healthy thought can no longer be elaborated. Humanity is dying from disease. Let us get rid of these poisons and utilize this governor to restore vitality. Then wars will cease, a new vigor will come into the world, disease will disappear and happiness will reign supreme.

The Site of Antibody Formation

An Analysis

By G. H. SHERMAN, M.D., Detroit, Michigan

A RECENT BOOK by Professor J. Danysz, chief of service, of the Pasteur Institute, Paris, on "The Evolution of Disease," is attracting considerable attention chiefly because of the author's favorable experiences with the use of a vaccine, prepared from the bacterial flora of the large intestine, in the treatment of a large variety of diseases.

A careful study of his work shows an enormous amount of data collected from animal experimentation, especially, along the line of protein sensitization and anaphylaxis, with an attempt to correlate this phenomenon with bacterial immunization and the cure of infectious

diseases of the non-contagious varieties. That the phenomenon of anaphylaxis following heterogenous injections of protein is equivalent to an immunization to that particular protein, is well established, and that immunization to infecting bacteria is also anaphylactic to the extent that the protein content of the bacteria influences the immunizing process, may likewise be accepted.

But, as Danysz points out, the amount of the anaphylactizing influence of an infecting organism depends entirely on the amount of toxic material that the infecting organism secretes during the activities of the living organism in the infected area; tetanus or diphtheria toxin being nearly exclusively toxic without producing anaphylaxis, while the white of egg is exclusively anaphylactizing. So, in the more toxic infections, where the essential feature of the infection is of a toxic character from the secretion of toxic materials by the infecting organism, anaphylaxis is but a small factor in the immunizing process, whereas in the less toxic infections immunization becomes more markedly anaphylactic.

The main interest to the general practitioner are the results that Danysz has obtained with a vaccine prepared from organisms isolated from the contents of the large intestine, which constitutes his *enteroantigen* for the treatment of a large variety of diseases including dyspepsias, constipation, enteritis, chronic appendicitis, sigmoiditis, urticaria, eczema, psoriasis, scleroderma, asthma, emphysema, rheumatism, dysmenorrhea, leucorrhea, mild chronic albuminuria, disturbances of the menopause, neurasthenia, melancholia, insomnia, migraine, general fatigue and cases of localized tuberculosis, of skin and other parts of the body. All these conditions have been cured or markedly improved by the administration of this vaccine.

Enterovaccines Not New

Sherwood Dunn of Nice, France (*New York Med. Jour.*, Jan. 4, 1922) considers this to be an entirely new departure in the treatment of these diseased conditions. This, however, is not the case. Vaccines have been extensively employed in all these conditions, with good results, for more than ten years by competent general practitioners; but, not being recommended by those high in authority, they did not attract general attention.

The obtaining of organisms from the intestinal content to produce a vaccine and calling it an enteroantigen does not bear any special significance. A colon bacillus isolated from an appendicular abscess is certainly as good an antigen as one isolated from feces. Staphylococci, streptococci and pneumococci are continually being swallowed with saliva and food and, to isolate these organisms after they have passed through the digestive tract, could not in any way improve their antigenic properties. The combined colon bacillus-streptococcus-pneumococcus vaccine is for all essential immunologic properties identical with Danysz's enteroantigen. This combined vaccine has become a standard remedial agent with thousands of physicians in the treatment of the same ailments in which Danysz has obtained his good results.

In describing results obtained under the subheading of General Reactions, page 175, Danysz says:

"The first striking phenomenon after the first, or the first few injections or ingestions of an autogenous or heterogenous preparation, is the rapid change in the patient's general condition. A direct action on the nervous system is nearly always observed which is shown by lassitude, a need for sleep, relaxation and rest, a general lull which is in no wise disagreeable, which may last several hours, rarely two or three days, and is usually followed by a long period (several weeks or months) of surprising exhilaration. The patient feels himself "being born again," he feels a surprising need for physical and mental activity, and can undertake without fatigue, work, which a few days before would have seemed beyond his strength. Sometimes, the period of lassitude is so short and slight that the period of exhilaration seems to appear all at once. In others, less frequent cases, the first doses of the preparation are followed by headaches which may last for several hours, by chills, or by a slight rise in temperature. Still more rarely, the symptoms of the disease are seen to increase slightly. Asthmatics may have a more violent attack, the itching dermatoses are aggravated, psoriasis plaques become darker; but these aggravations never last long, are not contraindications for further treatment, and are always followed by appreciable and rapid improvement. At the most, it may sometimes be necessary to diminish the dose. If this is necessary, only $\frac{1}{10}$ or even $\frac{1}{100}$ is given."

Tonic Effect of Vaccines

All these beneficial effects from a combined colon bacillus vaccine have been recognized for a long time and were designated as the tonic influences of vaccines. I. M. Mullick (*Calcutta Med. Jour.*, Aug. 1911, page 41) gives a detailed report of the increased metabolic activity in a variety of cases, as indicated by increased elimination in the urine during the twenty-four hours. In part, he says:

"These facts certainly give us some light as regards the changes within. Very probably it is this: (1) That vaccines stimulate metabolic activity, increase elimination of waste and build tissues; (2) That they hasten catabolism, especially of weak and unhealthy tissues and help

the building or regeneration of healthy ones. Even in old people, this is evidenced; but in the young, with their tissues in a higher state of vitality, this vital response is the most marked."

Dr. V. Dabney (*New York Med. Jour.* Feb. 10, 1912, page 275) offers a plausible explanation of the tonic effects of vaccines, by means of Ehrlich's side chain theory and, in part, says: "Naturally when the toxins are numerous, numerous receptors are preempted by them, and the metabolism of the body suffers proportionate detriment. Thus, by destroying these toxins, the vaccine renders available for food assimilation receptors heretofore occupied with toxin assimilation. The apparent effect of vaccine therapy on metabolism seems to bear out this theory."

In an editorial in *The Bacterial Therapist* (Jan. 1915), the writer said. "The general tonic effects of a vaccine may readily be demonstrated by giving a few doses of a combined vaccine, Streptococcus, 100,000,000; Pneumococcus, 100,000,000; Staphylococcus Aureus, 300,000,000; Staphylococcus Albus, 300,000,000; Colon Bacillus 200,000,000, in a case where general tonics are usually prescribed. It will be found that a feeling of well-being soon develops, associated with a keen desire to take food and a good digestion and assimilation to take care of it. With a demand for an increased food supply well taken care of, tissue cells have a better opportunity to develop and eliminate diseased conditions. In the treatment of chronic localized infections, with vaccines, we are often in doubt whether the beneficial effect obtained is due direct to its immunizing influence or to a general tonic effect. In many tissues, no material improvement in the infected area will be observed until the general health has materially picked up, as shown by an increase in body weight and other evidences of general improvement, after which the lesion begins to clear up."

Effects Are Not Non-Specific

These curative effects of vaccine are often ascribed to "non-specific protein reaction." That these results are not due to protein as such is shown by the vast difference in the dose that is required to produce similar results. Danysz declares (page 174) that it will require from 100 to 1000 times more animal protein, milk or serum, than bacterial suspension, and he suggests "that the bacterial antigens contain a much greater proportion of the active substances." I pointed out this difference in an editorial in *The Bacterial Therapist* of October, 1916. In referring to the work done by Miller and Lusk (*Journal A. M. A.*, June 3, 1916), where they found that 150,000,000 killed typhoid bacilli would produce the same reaction and therapeutic results when injected intravenously as obtained from the intravenous injection of 1.2 grain of egg white protein. This would represent about 5,000 times as much protein as is contained in 150,000,000 typhoid bacilli, considering that the entire typhoid organism is composed of protein. With such a difference in the required dosage to produce certain results, it is difficult to regard this as a protein reaction. The thought advanced by Danysz, that these bacteria contain an "active substance" in much larger proportion than proteins, looks reasonable. In his summary, he says:

"Every bacterium, every substance which penetrates, in a colloidal state, into the blood or tissues or, in other words, into the interior of an animal organism, must be transformed into salts and crystalloids, that is, must be digested in order to be assimilated or eliminated.

"Every organism, by its cells, glands or organs, normally produces a certain quantity of these substances or, more exactly, of a series of substances which carry on this digestion.

"When an organism has once been obliged to perform this operation, it continues to produce digestive substances in quantity greater than normal. It is then immunized and anaphylactized.

"All the substances which the organism is obliged to digest in its interior are antigens."

Artificial Immunization Differs From That Following Disease

When considering immunization problems in relation to infecting organisms in actual infections that develop spontaneously, we must realize that the invaded organism is confronted with entirely different conditions than when brought under the influence of injected animal proteins. When white of egg or horse serum, for example, are injected subcutaneously or intravenously, all that is required by the invaded organism is, the production of a ferment which will digest this foreign protein; there being no vital resistance offered by this injected protein for its destruction. This type of immunization is usually anaphylactic. In case of a spontaneous infection, on the other hand, the invading protein substance constitutes a living entity which possesses the power of secreting toxic substances or ferments which it employs to prepare the food on which it lives and by this means resists destruction and meantime poisons the invaded tissues. Under such conditions, anaphylaxis becomes a minor part in the immunizing process and it would appear that this is the prevailing situation in most cases of acute infection.

Animal experimentation has thrown very little light on this subject, because inoculated animals never bear the same relation to the injected antigen, even if live pathogenic bacteria are employed, as prevails when an infection develops spontaneously. If a spontaneous infection develops under the usual conditions, evidently a comparatively small number of the infecting organisms is responsible for the initial infection. Evidently, at the time of the inception of the infection, the resistance to the infecting organism is low, really much lower than the resistance of the animal which is inoculated for experimental purposes and, consequently, the end results can not be the same.

Antibodies Form at Site of Injection

Intensive clinical observation of the use of bacterial vaccines, however, would clarify the nature of some of the more important immunologic responses. The inflammatory reaction at the site of injection will indicate whether the antibody formed is anaphylactic or otherwise. When giving hypodermic injections of therapeutic serums, such as antidiphtheritic serum, antistreptococcus serum, meningococcus serum, or rabies vaccine (on account of the protein contained in the emulsified spinal cord of the rabies infected rabbit), it is found that with each injection, made several days apart, the area of infiltration at the site of injection becomes markedly worse. In reality, Arthus' phenomenon, a localized anaphylaxis, rapidly develops from the protein contained in the injected remedy. Nothing of this kind is observed from bacterial-vaccine injections, in fact, the reverse condition develops. The greatest inflammatory area always develops from the first therapeutic dose and, with subsequent injections, the inflammatory area diminishes under increasing dosage; so, by the time that 5 or 6 injections are made at five to seven days' intervals, there will be less infiltration at the site of injection with five times as large a dose as was employed with the first injection. It is also found that, if the injections are made in close proximity, over the same part of the body, there will be less infiltration than if an entirely new part of the body is selected at each injection. This would show that there is no precipitation of the injected antigen or vaccine and no anaphylaxis. But, the fact, that less inflammation develops after repeated vaccine injections, would show that antibodies have developed which digest the toxic or "active substance" of the vaccine. Furthermore, the fact, that tissues into which a previous dose of vaccine has been injected will develop less infiltration on subsequent injections than other parts of the body, would show that more of these antibodies are present in these tissues than in the tissues which have not been so actively influenced by the presence of the injected vaccine. This would also confirm Wright's contention that antibodies are formed by the involved tissues or by the tissues into which the vaccine is injected.

In the early stages of extensive acute infections, we have still more striking illustrations of this immunizing action of bacterial vaccines. A case of lobar pneumonia serves best as an illustration. During the early stages, within a few hours after the initial chill, we find the pneumococcus in the blood and also actively engaged in starting localized lung infection, as indicated by coughing up blood-streaked sputum, by painful respiration and other symptoms. In these cases, toxic symptoms with a temperature of 102 or 103 and rapid pulse, in conjunction with a feeling of extreme illness, usually prevail. If in such a case, at this early stage of the infection, a suitable dose of a polyvalent pneumococcus-streptococcus-combined vaccine is given subcutaneously and the injection repeated at twelve to twenty-four hours' intervals, in 9 cases out of 10, there will be a normal temperature within twenty-four to thirty-six hours with abatement of other toxic symptoms and, if the injections are continued, the case will go on to recovery within four or five days. There will be virtually no inflammation at the site of injection, although the dose is usually 1.0 mil, whereas, in subacute and chronic conditions, the initial dose of the same vaccine is but 0.2 mil.; and the vaccine is given at short intervals, whereas in chronic infections it is found advisable to make the injections at three to five days' intervals.

The absence of infiltration at the site of injection indicates that there was no anaphylaxis present. The fact that clinical symptoms show a rapid disappearance of the infection indicates that germ destruction progressed soon and rapidly after the vaccine was given. The only way that this can be accounted for is, that antibodies were rapidly produced under the antigenic influence of the vaccine injections which neutralized the toxins and sensitized the infecting organisms, so that phagocytosis could progress.

Virulent Streptococcus Infection

Cases of severe streptococcus infection will throw some light on this problem of inflammation and tissue destruction. A case that came under my care serves as an illustration. A

woman pricked her thumb with a needle, at about 2 o'clock in the afternoon. Four hours later, she had me call at her house on account of the severe pain that had developed meantime. On examining the thumb, the place where the needle had penetrated the skin could hardly be seen. However, the thumb was swollen, very painful and tender to touch and the thumb-nail was somewhat blue in appearance. I could not imagine that so slight an injury could cause so much disturbance from an infection, in so short a time; so, I regarded it as a case of felon developing, with the needle prick as a coincidence. A wet antiseptic pack was prescribed, with the idea of opening the thumb the next day. Two hours later, I was again called because the pain had become unbearable. Some morphine was prescribed and the wet pack continued. The next morning, when I saw the patient, there was no longer any doubt about the needle prick being the cause of an infection. The thumb was badly swollen, cyanotic, and with a red lymphatic chain, three-eighths of an inch, extending to the shoulder, with lymphatics of elbow and armpit involved; and a temperature of 102.5 F. There was a distinct area of gangrene developing around the point where the needle had entered. Bacterial examination showed this to be a streptococcus infection.

Similar cases, probably not quite as violent, are not at all uncommon. In this case, we had symptoms of localized bacterial intoxication soon after the streptococci were introduced by the needle point. The localized inflammation could not have been due to localized anaphylaxis, because there was great susceptibility to streptococcus infection, which could not have been the case if the patient had been sensitized to streptococci. There was no period of incubation, symptoms of bacterial intoxication developing soon after the streptococci penetrated the skin. The bacterial intoxication could not have been due to endotoxins, because endotoxins could only have been set free by a breaking up of the streptococci, which would of necessity have required a rapid destruction of the streptococci. This evidently was not taking place because of the fact that the infection was spreading rapidly. Nor could the bacterial intoxication have been due to split proteins, because that also would imply the destruction of the infecting organisms. From the rapid progress of the infection, considering the fact that it started from a very small inoculation, it is evident that the bacterial intoxication was the result of a toxic destructive material which the streptococci produced during their growth and multiplication, and that this toxic material was the ferment which these germs secrete, from their surface, to prepare and digest the food on which they lived.

Vaughn ("Protein-Split Products in Relation to Immunity and Disease"; page 2), when referring to a specially virulent pneumococcus which he had been working with says: "Virulence may depend on several factors, but rate of multiplication is certainly one of them, and on a common medium, as the animal body, this must depend on the effectiveness of the ferments whose function it is to prepare and utilize the pabulum on which the organism feeds." So, in this instance, the streptococcus was very virulent because it possessed the faculty of secreting a ferment which was very efficient in digesting the tissues in the infected area and consequently was exceedingly toxic and destructive.

A germ possessing such toxic destructive properties could certainly not be regarded as an efficient agent to influence tissue cells to produce protective ferments, or antibodies. The tendency would be, for the infection to progress rapidly to a fatal termination, and common experience with this class of cases is, that they usually do terminate fatally. In this case (the patient having come under my care before vaccines came into use) I gave a 40 mil dose of antistreptococcus serum at once and repeated the same dose two days later. The patient made a good recovery, showing improvement within twenty-four hours after the first dose; but, before the infection was brought under control, an area of skin three-eighths of an inch actually sloughed out across where the needle had entered. I have treated similar (though not quite as severe) cases with vaccines and with equally good results.

Living Virulent Germs Not Proper Antigens

These clinical observations show that live, virulent infecting organisms are *not* dependable antigens to influence body cells for the production of the protective ferments or antibodies which are necessary to eliminate the infection. On the contrary, because of their destructive toxic influences, they become toxic, hindrances or destructive agents. And, if antigenic properties eventually do develop it is usually a prolonged process, commonly after much destruction has taken place.

It is the contention of some investigators that the lymphatic internal organs eventually come to the rescue and produce the necessary protective ferments as a result of the general

bacterial intoxication. At best, this is a slow process and too often does not develop in time to save the life of the patient. The rapid recoveries from acute infections, such as pneumonia, erysipelas, lymphangitis, puerperal sepsis, etc., under early and adequate dosage of bacterial vaccines, can not be accounted for on the contention that the lymphatic internal organs produce the protective ferments or antibodies. It must be remembered that vaccines are given in very small doses when applied therapeutically, the average therapeutic dose being less than 0.0004 grain of killed germs; a dose so small that it will produce no appreciable effect on the temperature, pulse rate or other toxic influences. In fact, the amount of toxic material contained in an average dose of vaccine is but an inconsequential fraction as compared to the toxic material already present in a case of acute toxic infection. It is inconceivable that this small amount of toxic material should influence the internal lymphatic organs when injected subcutaneously, within one or two days, so as to produce sufficient protective ferments or antibodies to stop the progress of an infection when the large amount of toxic material already present from the infection does not induce them to produce the necessary antibodies.

Antibodies Produced at Site of Vaccine Injection

Wright's contention, that the protective ferments, or antibodies, are produced by the tissues into which the vaccines are injected, offers a rational explanation of what actually happens as shown by clinical results. It was the results obtained in the early stages of acute streptococcal lymphangitis and cellulitis that induced Wright to refer to them as "most dramatic and convincing." The subcutaneous tissues into which the bacterial vaccine is injected deal with these injected killed organisms as intruders, because they have the "earmarks" of an infection. So they "get busy," at once, to dispose of them. And, this is accomplished by ferments which these tissue cells produce to digest these injected organisms. The germs being killed, they can offer no resistance to the activities of the tissue cells, consequently the entire tissue-cell energy is utilized to produce protective ferments, or antibodies. These antibodies are then conveyed to the injected area by the circulating medium and there aid the infected tissues in overcoming the infection. The reason why similar results do not occur where live germs invade the body tissues is, that the live germs, by the ferments which they secrete to digest the food on which they live (and, really, these digestive ferments are the only means of defense the germ possesses) are too toxic to effectively influence the tissue cells with which they come in contact to produce the necessary antibodies. On the contrary, they depress, cripple or retard and inhibit their antibody production. If the vaccine is employed early, efficient antibody production will be induced in time to avert a prolonged illness or a fatal termination. This accounts for the most favorable results being obtained when the vaccines are employed soon after clinical symptoms indicate the presence of an acute infection.

Etiology of Deep Transverse Arrest in Median Vertex Presentation

By F. GROSS, M.D., Kansas City, Kansas

IN about 1.6% of all vertex presentations, we find an occipito-posterior position; but, after labor starts, the occiput will rotate anteriorly in 80% if given sufficient time, and the mechanism of labor will be that of an occipito-anterior position; 15% will be born spontaneously with the face towards the symphysis, and the balance represents rare anomalies in attitude, presentation or position, such as high occipito-sacral position, brow and median vertex presentation, etc., which, if associated with absolute arrest, cause one of the most difficult situations to be met in obstetrics.

While the existence of a "median vertex presentation" (in which the head passes through the entire pelvis in a moderate deflexion attitude) is not recognized as a dystocia *per se* by some authors, nevertheless the majority of authors, as Baudelocque, Hodge, Hirst, De Lee, Kehrer, etc., admit such an anomaly, and the mechanism of labor of the cases reported below will show that such a presentation is not uncommon.

When the head descends into the pelvis and anterior rotation of the small fontanel does not take place, and, after the head reaches the pelvic floor and, in spite of sufficient time and strong uterine and abdominal efforts, the sagittal suture remains in the transverse diameter of the pelvis, we speak of this as *deep transverse arrest* (*tiefer Querstand*).

Causes of Deep Transverse Arrest

A number of abnormal conditions must be considered as etiological factors or causes of deep transverse arrest, which conditions however may not only be causative of deep transverse arrest but of deflexion attitudes as well, and I mention the following:

1. Simple flat pelvis in minor degree, where the (large) head keeps the same attitude in which it passed the superior strait; which is characteristic of the form of this pelvis.

2. General contracted flat pelvis and normal head.

3. Funnel pelvis where the head passes the pelvis with the sagittal suture in the transverse diameter until it reaches the pelvic outlet where it is wedged between the tubera ossis ischii.

4. Impaction of a small head which descended rapidly through the pelvis with its sagittal suture in the transverse diameter until it has been arrested at the pelvic outlet which is smaller (11 cm) than the fronto-occipital diameter of the head (12 cm).

5. Prolapse of an arm in front of the occiput (a prolapsed arm behind the occiput would facilitate anterior rotation).

6. Inertia uteri during the second stage, especially in occipito-posterior positions with large heads where the small fontanel rotates only half way anteriorly.

7. Relaxation of the soft part of the parturient canal in multiparae.

8. Anything that will cause a straightening of the child's trunk or interfere with the flexion of the chin on the chest (as, in a short, deep-chested child, tumors, etc.).

In addition to the foregoing causes of deep transverse arrest, I will mention three others (and which, to my knowledge, are not mentioned in any of the textbooks on obstetrics); namely:

9 Poorly developed or unusually strong projecting spines of the ischia.

10. Encroachment of well developed iliopsoas muscles upon the lumen of the pelvic inlet, which prevents the anterior rotation of the posterior shoulder.

11. Coiling of the cord around the neck and thorax, which mechanically prevents the anterior rotation of the fetal back and head and which, I believe, is the most common and direct (or at least contributory) cause of all cases of deep transverse arrest as shown by the following two cases:

A Case in Point

Mrs. G. G., age 22, primipara. First examination, Jan. 20, 1922. Last menses, April 19; quickening, Sept. 3; expected confinement, Jan. 24. History: Urinary findings, blood pressure, etc., show nothing abnormal. Pelvic measurements: distantia spinarum iliorum (Sp. I.), 24; distantia cristarum iliorum (Cr. I.), 26; distantia bitrochanterica (Tr.), 32; conjugata externa (C. extr.), 18; conjugata diagonalis (C. d.), 11.5; conjugata vera (C. v.), 10; distance between the tuberosities of the ischia (Bi-isch.), 10.

Abdominal examination: fetal back and heart tones deep in the left flank, small parts on right side near median line, a *distinct hollow over the pubis!* Vaginal: projecting spines of ischia, head above pelvic inlet. Diagnosis: left occipito-posterior position by a slightly generally contracted pelvis.

Jan. 23rd at 10 p. m.: Patient has strong labor pains, every 7 to 5 minutes, since 4 p.m.; tundus at xyphoid process (!); fetal back in left, small parts in right side; heart tones 130 per minute and more anteriorly than three days ago; head movable at pelvic inlet. Vaginal: dilatation of cervix 1.5 inch; membranes intact; large fontanel to the right of diagonal diameter; sagittal suture in transverse diameter of pelvis and half way between promontory and symphysis (we expected asynclitism in this shape of a pelvis!); small fontanel not plainly felt.

Treatment: Scopolamine-Amnesia after the method of Dr. Siegel, at Freiburg-Giessen, and placing patient on left side only, to favor flexion of head, downward movement of the occiput and anterior rotation.

Jan. 24, at 6 a.m.: Patient rests between pains which now are regular every three minutes, but only of a few seconds' duration (!). Vaginal: head between the first and second parallel plane of Hodge; nearly complete dilation; large fontanel to the right and on a level with the small on the left and sagittal suture in transverse diameter.

At 8 a.m.: Spontaneous rupture of the bag of waters; left shoulder in median line just above the pubis; head deep at pelvic floor; sagittal suture still in transverse diameter of pelvis and small fontanel on left side and still on a level with large one on the right. On account of labor pains being weak and lasting only a few seconds, pituitary solution ("Abbott"), 0.5 Cc. was given and repeated twice, thirty minutes apart. The head was forced lower through this medication, but no permanent anterior rotation of the occiput took place and the sagittal suture turned only into the right oblique diameter during each and every uterine contraction, reverting back again into the

transverse between the pains. Hodge manœuver: "pressing the sinciput upward during pains," pressing the forehead up and back over the right spine of the ischium and all other attempts to favor anterior rotation by increasing flexion were without avail.

Progress of labor was at an absolute standstill and the patient was removed to the Providence hospital at 11 a.m. As the vulva showed increasing edema and the fetal heart tones went down to 80 a minute, I was forced to apply the forceps, grasping the head obliquely, the left blade lying posteriorly on the left parietal bone near the left sacro-iliac joint, the right blade anteriorly behind the right ramus pubis on the right molar. Under anterior rotation and progressive traction (synchronously performed!), I delivered the head under great difficulties. Now it became apparent that the cord was twice around the child's neck and, after loosening it, the body was delivered under Kristeller's application in the usual way.

The child is living and was not asphyctic. It weighed 4500 Grams, which must be considered a large child for this small mother. The large caput succedaneum was on the right parietal bone, *close to the posterior third of the sagittal suture*, the neck very short, the head being set squarely on the shoulders in the socalled "military attitude"; all characteristic for a *median vertex presentation*.

Trouble Due to Cord Around Neck

Now, of all the causes of deep transverse arrest that I have mentioned, none seems to be more plausible in this case than the coiling of the cord around the neck and thorax, and I want to describe the course of the cord. It ran from the umbilicus transversely over the *right* thorax through the *right* axilla over the back and twice around the neck, thence over the fetal abdomen to the placenta. One can easily conceive that such a coiling must cause great tension on the cord between the placenta and the beginning of the coiling around the neck. We know that the site of attachment of the placenta approaches the pelvic floor during an uterine contraction, whereby the cord will be relaxed and the physiological anterior rotation of the fetal back and occiput is made possible under normal conditions; but, in this case, as soon as the pains passed and the placental site reverted back to its former place, the tension or pull on the cord brought the head back again into its former pathological position, e. g., into the transverse diameter.

Another Case

On March 15th I attended a similar case of deep transverse arrest. Mrs. J. M., age 37, VI para; left occipito anterior position; normal pelvis; *pendulous abdomen*, beginning of labor at 2 a.m.; spontaneous rupture of the membranes at 4 p.m. Vaginal examination: Complete dilatation; head above pelvic inlet, sagittal suture in transverse diameter, small fontanel on left side. On account of infrequent and weak labor pains, pituitary solution, 0.5 Cc. was given, causing very strong and frequent uterine contractions. At 5 p.m.: *head at pelvic outlet, sagittal suture in transverse diameter.* As labor was at a standstill for some time in spite of strong and regular contractions, and on account of a rapidly forming caput succedaneum and discharge of meconium, I applied the forceps at 6 p.m. and delivered a twelve-pound child in *asphyxia pallida*, with the cord around the thorax and neck exactly as described in the other case, which condition must make one very suspicious that coiling of the cord was the cause of deep transverse arrest in both cases. Furthermore, I was able to demonstrate the pathological mechanism caused by coiling of the cord around thorax and neck on the phantom in a convincing manner to a number of physicians.

The experiment on the phantom also proves the following facts:

a. *In a* **left** *deep transverse arrest:* If the cord runs from the umbilicus over the *left* thorax through the *left* axilla, over the fetal back, around the neck and back to the placenta, there is *no* tension on the cord to prevent complete and permanent anterior rotation of the occiput; labor will terminate normally and only the period of expulsion and delivery of the head may be somewhat retarded on account of the coiling, as we see it in about 20% of vertex presentations.

b. *In a* **right** *deep transverse arrest:* Anterior rotation of the fetal back and occiput is interfered with *only* if the cord runs over the *left* thorax, through the *left* axilla over the fetal back, around the neck and back to the placenta, but *no* tension or pulling back of the head by the cord occurs between the pains, if it runs over the *right* thorax through the *right* axilla.

I beg any ardent student of obstetrics to do a little "obstetrical thinking" and imitate this pathological mechanism of deep transverse arrest with a "baby doll and a string"—if nothing better is on hand—and convince himself of the effect of the coiling of the cord around the thorax and neck under certain conditions in a protracted case of deep transverse arrest: because, if it is not recognized, or at least suspected, and if artificial help is not extended in time, child and mother will die.

Fracture of Odontoid Process With Treatment

By L. A. BURROWS, M.D., Salt Lake City, Utah

MRS S., age 21, while bathing on the evening of July 12, 1921, was swimming with her head under water and ran into an iron post, striking the top of her head. There was a temporary chill, dizziness and faintness. She was able to walk home and did not complain of anything. The following morning, she stayed in bed later than usual and did not eat any breakfast. At about 1 p. m., she had a cup of coffee but vomited it and then fainted. She was first seen by me at about 8:30 p. m. and I was told that she had been sick for a few hours with headache and photophobia, but not of the accident to her head.

She was then semiconscious and complained of severe headache, backache and photophobia. She was constantly digging at the back of her neck. The pupils reacted to light and were equal. The neck was somewhat stiff. Nose and throat congested. Conjunctivæ normal. No rash. Anesthesia of extremities. Knee jerk seemed to be slightly accentuated on the right side. Kernig sign positive. Pulse, 132; respiration 18. Direct smears from nose, throat and eye showed a few staphylococci and pneumococci. Patient became delirious about 9 p. m. and remained so throughout the night. During the night, there were several opisthotonic spasms. At about 5:15 in the morning, the heart action became weak and irregular and stimulation was given freely. At the same time, the respiratory action rapidly decreased in depth and length and, in a few minutes, stopped entirely. Artificial respiration was started and continued as necessary for about an hour. For the next 36 hours, there was some delirium a great deal of the time, but gradually it became lighter and of shorter duration.

On July 17th, the patient told me of the bumping of her head on the post and called my attention to a slight lump on the back of the neck over the spinous process of the second cervical vertebra which was quite tender. X-ray examination showed a fracture of the odontoid process and a fracture through the left articular facet of the atlas.

The patient was then kept in bed, with the head of the bed elevated 10 inches and extension maintained with a halter and a weight of about 15 pounds for about three weeks, during which time the symptoms were relieved. But, as there was not sufficient immobilization, a cast was applied.

The development of an acute appendicitis at this time, necessitated the removal of the appendix from which she made an uneventful recovery.

The cast was removed at the end of six weeks. Upon the removal of the cast, the patient again had attacks in which she complained of vertigo, headache and numbness and became unconscious, when the physical findings were similar to those previously noted. The pulse became slow and irregular and the breathing slowed down noticeably. The extremities became cold and clammy some time before unconsciousness supervened. The periods of unconsciousness varied from a few minutes to seven and a half hours, but they were rapidly becoming of shorter duration until she took a short trip on the railroad which probably undid what repair that had taken place.

Upon her return from the trip, she was complaining of severe gastrointestinal disturbances with vomiting, vertigo, diarrhea, headache; and the extremities were continually cold and clammy. This did not respond to treatment. The odor of the stools was that of decayed flesh. There was extreme tenderness and soreness over the spinous proscess of the second cervical vertebra. The temperature remained about 102.5° F. during all this time. She was taken to the hospital on Nov. 1, 1921, where further examination was made. The white-cell count was 11,800. Other blood examination proved negative. After thorough and due consultation, it was determined that the symptoms presenting were due to a slight pressure on the spinal cord in the upper cervical region because of the apparent abnormal amount of movement between the first and second cervical vertebra.

Operation was decided upon and, after a very exhaustive search of the literature, a very brief record of the operation on a similar case by Mixter and Osgood was found in "Fractures and Dislocations" (Speed).

On November 2, 1921, I operated, using hyoscine-morphine (¼ gr.)-cactin one-half hour previous to operation and, as the patient was quite nervous, an additional ⅛ grain morphine at time of operation. Local anes-

thesia was secured by infiltration, with 1 ounce of a 1-percent solution of Butyn (Abbott), extending from a point just below the occiput downward for 3 inches about 1 inch wide and inward around the posterior arch of the first and around the spinous proscess of the second cervical vertebra. An incision, 2½ inches long, was made exposing the posterior arch of the first and the spinous proscess of the second vertebræ. A ligature carrier was passed inside the arch from below upward and then threaded with a heavy braided silk which was drawn around the arch and made fast about the spinous process. The incision was closed and a cast applied. A window was cut through the cast and the stitches were removed on the fourteenth day.

Since operation, there have been no symptoms referable to the fracture and all other symptoms cleared within two days.

The cast was removed Jan. 23, 1922. The spinous proscess is in normal position and apparent cure has resulted.

On Feb. 13, 1922, the patient went to the hairdresser and had her hair shampooed. Shortly after, she felt a pain in her neck, had a chill and became dizzy. These symptoms continued and her head began to ache and she began to have pain in her abdomen. At 11:40 p. m. Feb. 14, she became unconscious and delirious and remained so for four hours The pupils were equal, regular and reacted to light. There was total anesthesia, knee jerk absent, twitching of the muscles and the hands and feet were cold and clammy.

On Feb. 15, she was taken to the hospital and operated on as before, with the exception that 1¼ ounces of Butyn (Abbott) was used containing 5 grains of Butyn, and two separate pieces of heavy braided silk were put in as before, especial care being taken to tie the knots so that it would be impossible for them to slip or give, it having been found on operation that the knot had slipped. A cast was applied and kept on for three weeks, when it was removed. All symptoms cleared up after operation. At present the patient is working and in apparently good health, and with no interference in the motion of the head and neck.

Memoirs of the World War

By DR. GUSTAVUS M. BLECH, Chicago, Illinois

[*Continued from May issue, p. 348.*]

CHAPTER V

With the 33rd Division

I LEFT Paris with the first available train for Eu and reported upon arrival to headquarters at the front, by military telephone. I was informed that an automobile would be sent to Eu the next day to bring me back. I had about twenty-four hours' vacation before me, and went to the largest hotel where I secured a room.

To my great astonishment, I saw in the hotel a lieutenant-colonel, a major, and a few subaltern officers, all of the infantry. The younger officers appeared dejected. One of the older officers was trying to engage in a flirtation with a chamber-maid who tried hard to make out what the officer meant, for he only knew a few words of French. I went to our office in search of an officer. The moment I entered the room, clicking of the typewriter ceased and the non-commissioned officers came up and began to talk almost all at once.

This was in response to my inquiry what the Division had been doing while I was gone. An officer who had come to Langres, July 8, told me that on our national holiday the Division had gone over the top, and I did not believe it. They showed me the casualty cards—quite a package. I rapidly went over the lists. All those marked G. S. W. (gun shot wounds) I placed on one side; but there was quite a number marked: "Dropped from the roll—killed in action." I recognized names of officers and men I had known, and something seemed to grip my heart like a vise.

However, the boys did not seem to feel that way about it. One of them spoke up. "You have influence with General Bell. For God's sake get us out of here. We want to go up there."

I spoke and spoke about soldierly duty, about the necessity of the work they were doing, about there being glory enough for all of us, and more such rot, but I realized that I was not making myself popular. I was proud of these American boys who despised themselves for being condemned to pound typewriters, while their comrades were shedding their blood. Such a little thing as being mutilated or killed had no horror for them.

The officer in charge appeared and relieved me of an embarrassing situation. I asked him what the infantry officers were doing at the hotel.

"Oh, they were canned. They are on their way to Blois."

Elimination Via Blois

Blois! In times of peace a harmless little French city. Today, the very name of that city spelled despair, desolation, humiliation professional death!

Two classes of officers were sent to Blois, the convalescents from wounds and disease, who were left physically impaired so as to be unable to continue their honorable service at the front, and the professional misfits who were considered inefficient by their commanders.

At Blois, these human cast-asides were to be classified. From Blois there were two principal roads over which the majority had to travel. One of them led to the United States and civilian clothing, the other to some camp, depot, or bureau in the service of the rear. As a rule, those who were sent over the second road heard themselves addressed by another title than the one they had borne.

I went back to the hotel. At the gate, I met the lieutenant colonel and the major. They engaged me in conversation.

"When are you leaving, Major?" the colonel asked me.

"Tomorrow."

"Hm—, we have no orders yet. I guess I'll run over to Treport. Will you come along?"

"No, thank you. I have to look after my baggage."

"I am rather surprised to see you here. I understood you were considered a top-notcher in your corps. Have any trouble?"

It then dawned on me that these officers knew nothing about my detail to the school and believed me to be in the same boat with them. I could hardly restrain myself from laughing.

"No, Colonel, I really am not aware of having had any."

"Oh, I see, politics. That's it. I tell you, Major, it is a d—— shame when men like you are treated that way—"

"Oh, I am only one in four million. I guess none of us means very much in the A. E. F. Tell me more about yourself. I really know nothing about it."

"Well, I'll tell you in plain English. I got a rotten deal; that's all there is to it. I was in a maneuver with Major ——— (referring to the other officer), and we had two battalions. We were supposed to be at a place at a certain time, but there was some hitch when we started and we lost our way; we were just thirty minutes behind time. That's all there is to it. I tell you, the Chief (meaning General Bell) is a heartless machine—he ain't human."

I could restrain myself no longer.

"Colonel, you are exceedingly careless with your speech. You are heaping contumely on the highest officer of our division who has on his shoulders the responsibility of thirty-three thousand lives. Did it ever occur to you that at the headquarters everybody loves, admires and respects him? Why?

"You say you came half an hour too late in a maneuver. I presume you think that was a bagatelle. Supposing you acted as a reserve force in action. Do you know what may have happened in thirty minutes? I'll tell you. You would have been responsible for the murder of several thousand men. That's what it is. And I warn you that, when I reach Moliens tomorrow, I am going to report to General Bell all you have said."

I anticipated to see consternation on the man's face, but to my great surprise he said:

"Oh, h——, I am through with the whole thing. I am going home. Let the fools kill themselves if they want to."

I turned about and went to my room. Later, the Major came in and tried to bring up the subject. He told me that he realized his own shortcomings; but he could not go home and face his wife and friends.

"You don't have to. If you take my advice, when you report at Blois, tell the officers the unvarnished truth about yourself. I am sure you will receive an assignment. If you can convince them that you have the goods' they'll return you to the front."

There was no end to the officer's expressions of thanks.

I returned the next day to Moliens. The General asked me about my experience. I told him what I had seen, heard and learned, and expressed a desire to write a small manual on field surgery. I told him that the commandant of the school had approved of the idea.

"Well, there is not much to do. Go ahead, and let me see from time to time what you are doing." The incident at Eu was mentioned by me but, of course, I did not repeat the conversation pertaining to the general. It was as I surmised; the officers had proved absolutely inefficient.

Under Fire

A few days later, the Australians, assisted by units of our division, began a push against the German lines. In the evening, Colonel Hathaway requested me to accompany him to the front. I took my helmet, stuffed my pockets with some chocolate and entered the automobile. It became quite dark. We reached the position of the artillery, halted the automobile and proceeded on foot. Companies of American troops in broken groups marched to the trenches.

It was the first time I had seen something of real war. The terrific crashing when the shells were sent over No Man's land seemed to pierce my ears. After a while, I could tell by the noise in the air whether a shell was solid or a gas shell—the latter giving off a peculiar sound. I could even tell by the "wobbly" noise when a shell had deviated in its position; that is to say, when the "nose" of the shell was not flying foremost.

In plain view of us the Germans were throwing up star-lights to observe whether our troops were starting rushes. I accompanied Colonel Hathaway into a dugout. A few wounded men had been brought in; they were lying on their stretchers smoking cigarettes.

We went from one underground aid station to another. At the entrance of one, more wounded were being carried down the steps. Two litters were on the side. I lifted the blanket of one and beheld a young soldier lying terribly still—the glassy eyes told the story. I lifted the blanket of the other. It was very dark on that spot and I scrutinized the soldier's features. I replaced the blanket—

The round was completed. We started on our return walk. As the helmet was causing headache and soreness of the muscles of the back of my neck, I carried it in my hand. A bursting shell in the immediate vicinity would have struck under the helmet anyway. I started to munch my chocolate and gave some to Colonel Hathaway and another officer who accompanied us. The walk seemed endless. Finally we reached the automobile. I leaned back in the cushions. The inferno was loose all around us, but it had no longer an effect on me. I was tired. We lost our way; instead of going directly west, the driver followed a southwesterly road. After a while we were in the neighborhood of Amiens. It was nearly 3:00 a. m. when I got into my rickety bed made up of a few crude boards, a straw tick and my bedding roll. I lay for an hour thinking of the horror yonder; of the readiness of men to sacrifice the all for country and honor. I thought of the two faces on the litters, fascinating in their strange stillness. Gradually my eyes closed.

German Prisoners

Australians and Americans were pushing the German lines back towards the Rhine; the usual artillery duels followed by infantry attacks began to bring results. It was no longer anything exciting to hear every morning that our headquarters was so many kilometers farther to the rear.

One morning, I went on foot to see the workings of a corps aid station located behind the front in the outskirts of a small village. As I skirted a woods where the 132nd Infantry was encamped in wet mud, I saw a

Red Cross Post Office at the Front.

troop of German prisoners of war marching on a footpath near the main road. There were about forty men and they were escorted by two guards; Americans, who seemed to pay little attention to their healthy, young, well-fed charges.

If there was starvation in Germany, there certainly was none in their army, and many a British and American soldier told me that they found in the conquered German trenches a good deal of bread and canned foodstuffs.

But, in spite of this, the German prisoners seemed contented. I was very anxious to talk to the Germans, but communication with prisoners was forbidden to unauthorized officers, so I just judged the situation from appearances. I saw a Chicago soldier, an Italian by birth, whom I happened to know. He was coming towards me and at the proper distance saluted me. I returned the salute and stopped him for a talk. In my imperfect Italian I called his attention to the passing group of German soldiers. "You are proud to be an American soldier, is that not so?"

"Si, signor, very proud! Don't you think the war ought to be over very soon?"

I was taken completely by surprise, but this child of simplicity expressed without camouflage what was going on in the souls of countless officers and men.

I walked on, map in hand, watching for the crossroads on which I had to turn. The air was warm, one felt like stretching out on the grass and smoking one's pipe and dreaming. But I was virtually under orders and my superior was sure to demand a statement in what working condition I found the station; so I kept on walking, allowing the perspiration to come down undisturbed.

The Fear of Being Mutilated

Suddenly I noticed an aeroplane. The German motors have a peculiar humming sound, and I was certain that it was a "Boche" plane. I had also learned to tell them by their build, this information being imparted to us in official books. The machine was not very high, to my horror I recognized the Maltese Cross under the wings, and it seemed to me that the machine was heading directly for me. There was not a human soul within sight. A few hundred yards behind me, off the road was an ammunition dump. I had passed it a few minutes ago and saw there immense piles of artillery shells. Perhaps the machine was headed there to blow it up.

My heart was pounding. Should I walk, lie down, stand still or make a dash for a nearby tree? I gave up the idea of escape for, surely, the pilot must have seen me. Instinctively I halted to await whatever was to come. The machine flew over me and away. A minute later I heard firing, and I saw little white and black puffs of smoke dot the heavens—now here, now there—the anti-aircraft guns were driving the machine back.

Either the plane was a mere reconnoitering plane and had no bombs, or else the aviator did not think me worth the few dollars a bomb costs, but the incident caused me to make a self-analysis, which was something like this:

"You are a coward, after all, for you were frightened."

"Yes, I was frightened, I have to admit."

"But what were you frightened about? Didn't you preach to your men again and again that death must be faced by a soldier with stoicism? Did you not explain to the men when you drilled them that one of the important purposes of the drill was to insure discipline, which means no more and no less than for the officer to lead his men through the very jaws of hell, certain that he is followed despite the very natural instinct of self-preservation?"

"Yes, yes, that is all very true, but I am not leading men against an enemy. Then death would have a purpose, but here alone, on a mere errand of observation and study, alone and almost useless, the destruction would have no sense, no purpose. Besides, it was not death I feared, but mutilation; for, the compassion, the admiration that is felt for a crippled or disabled "hero" when he returns to his people does not last long. The people may shout and yell and betray enthusiasm and admire your cross on the breast, but sooner or later they tire, and if you are helpless you become an object of charity, a man that is in the way."

I shuddered. I thought of a fine young woman who loved a soldier. For some months, she did not hear from him. Then came a letter—it contained a brief message: "Everything is pretty dark here." Finally he scrawled a few lines and asked the nurse to address an envelope for him. "I am totally and incurably blind. I release you from our engagement" was what he wrote. A few weeks later he was evacuated home. His mother did not weep—in his presence. To her, whose flesh and blood he was, he was the ever-welcome returned hero, come to bring her back her old happiness. But "she" did not come. "She" had her release. The dapper young business man who escaped the draft and certainly did not volunteer, and who was a steady caller with bouquets, candies, and theater tickets, was such a "refined gentleman," etc., etc. *My* "she" could not and would not accept release; but, death would be preferable nevertheless.

I thought of a serious conversation at headquarters. Several officers there seemed to feel it as a stigma to be eight kilometers in the rear of the firing line; others again dwelt on the eight kilometers as being the real front, for was there not a big shell hole right in the garden of the General's chateau, near where the signal corps had erected its wireless apparatus? Did we not have to carry our gas masks always, because the Germans could send over any desired number of gas shells and make it uncomfortable for us? Had we not been bombed?

"For my part," I replied to all this talk, "I wish headquarters were in a decent city, as far away from the firing line as possible. I am not a member of the suicide club and I like comfort too well to miss it with pleasure."

What is the psychology of all this? We see day after day our young men leave our area

and march to the trenches. When they are relieved from the tour some are missing but the others have done the actual work of winning the war; and, considering what they had to go through, administrative officers and men on clerical duty feel that they are not in it, and this thought humiliates them. That was why the pay clerks at Eu begged me to aid them in getting to the front.

If I were an infantry or artillery commander, I should have felt the same way; even if I had been in charge of an ambulance company I should have felt the same way. But, I was not, and, therefore, I could not and was not supposed to go over the top or face machine guns or push my bayonet through the bodies of my antagonists.

Recklessness and Cowardice

At school, we had a brilliant general staff officer give us a lecture of three hours on tactics.

He told us of a lieutenant-colonel of the signal corps who ordered some sort of an apparatus installed. The men who started to obey the order were killed. He went himself and was killed. The lecturer pointed out that this officer actually committed a serious offense. It has cost the Government much money to educate him to a degree that insured great usefulness to the army, and he threw his life away on an insignificant job that was the province of a less valuable member of the army.

Two men were charged with desertion under fire. I may add that these men had merely lost their way; so, all discussion at headquarters about this case came to naught. I learned that one of them was the son of fine parents and married. When every circumstance pointed to the guilt of these men, I still said that I did not believe them guilty.

"How can you say so?" I was asked, "when we have the report that these men were marching to the trenches and disappeared before they reached the dugouts?"

"Because," I replied, "the whole thing is absurd. I take it that we all are afraid to die. But is it not better to be killed by an enemy than to die an ignominious death at the hands of a firing squad? And, what man has the courage to face his family with the brand of a coward officially stamped on his brow, assuming even that he figures on not being sentenced to death? I confess I would go through hell from sheer cowardice, or pride; call it what you please."

War is abnormal. All the standard conceptions of peace, the instincts which are absolutely natural and moral are declared immoral by the highest earthly authority, and now there is an anxiety to comply with this view contrary to our own inclinations.

Who, I asked, brings a greater sacrifice in war—the man who through a poorly developed mentality does not know the fear of death and mutilation, or the man who clings to all that is dear in life and who gives up the all for principle, or self-respect or for a sense of patriotism that has forced him to take a chance with life and death?

At the Corps Aid Station

I have digressed, so let us end the walk. Even without my map I should have found the station. At the last cross-roads, the presence of military police, the coming of trucks loaded with English, German and American wounded showed the way. Red Cross flags led to a house with a gate and large courtyard. On one side was a "vacherie," a cow stable, built of brick. It was a large modern cowbarn with troughs of stone, the floor paved and cemented, the architects evidently having constructed the stable with a view to facilitate cleanliness.

When I arrived, fifteen surgeons, British and American, had been working like beavers. No one seemed to be in authority. I saw a British major, of the Royal Army Medical Corps, standing idle, and I asked him whether he had charge. He was sent to help out only, he informed me.

A truck unloaded at the front door. Wounded British soldiers were supporting a German wounded in the knee. It is not an uncommon sight to see enemy assisting enemy after it is all over. All were dirty, shoes muddy, uniforms besmirched, faces grimy with dust and blood.

The Germans were sitting on a bench awaiting their turn. They all had received medical attention immediately after capture. A small French officer in the uniform of the Corps of Interpreters was asking them in excellent German for their names, regiment, age, social status, residence, and religion. I noticed a German non-commissioned officer of the medical department and asked him about his wound. He was in a trench dressing wounded Americans and Germans. They did not realize the enemy was near, for but a few minutes ago five American and one British wounded prisoners had been brought in. He and his doctor were working away. Suddenly there was a rush. The Americans yelled: "Don't shoot!" So they were allowed to finish the

dressings, after which they were marched out. He had gone out first, someone threw a hand grenade and a piece struck him in the knee.

"Did the grenade-thrower see you?" I asked him.

"No, Herr Doktor, he did not. Do not misunderstand me. Our wounded prisoners saved us. The Americans have noble sentiments."

I dressed his wound. His knee had merely an external wound. He was given antitoxin to prevent lock-jaw. As he started out, he clicked his heels together and thanked me.

"What are you in civil life?" I asked him.

"Professor of comparative philology."

I did not believe it. The man looked too rough for a professor.

Dressing Station conducted by Ambulance Company 129, Capt. Benedict Aron (Chicago) commanding. This organization did yeoman service at the front.

"Oh," I remarked, "in that case you know Latin." "Certainly."

I began with a commonplace remark. As if I had loosened a dammed-up river came a flow of sentences. And after it was finished there came in Latin this question: "What will be my fate?".

"You will go to a prison camp. You will be treated as a man should be and after the war you will be sent home. Why did you ask?"

"Because I did not know Americans were in front of us. We were told we would be sent to America if caught by the Americans."

I laughed, and he replied with a smile. Then he went to a side building to get tea and a smoke.

An American soldier had a gunshot wound of the chest. The bullet could be felt in the muscles of the back. A young surgeon would not remove it—he had instructions not to. What nonsense. The point of the missil could be seen. I tried to extract it with forceps, but the muscle held it firmly. A nick with a knife, the opening was enlarged and the bullet was extracted. The boy looked at it with keen delight, as if to say: "So you are the fellow that did that to me?"

I asked for the bullet. He begged hard for it; said he wanted it for his mother, and I let him have his trophy.

Just as I had entered, I saw a German soldier being loaded on an ambulance. The mark of death was on his brow. I asked an officer what was the matter with him. He told me a bullet had entered the abdomen from the inner side of his thigh and had no doubt torn his bowels. They did not want him to die at the station so they sent him to a hospital. He would not reach the hospital alive, that was sure. But, why was he brought here? Even if nothing could have saved him, he should have been given the benefit of the doubt and allowed to remain undisturbed in a trench, until he either showed signs of improvement or died. Still, let us not judge too harshly. The intention to evacuate is good. In the maddening rush, mistakes of that sort will happen. I doubt further whether that man had any chance at all—his wound being of the character that usually results in death on the battlefield.

The last of the wounded came to the desk for registration. Some of the surgeons slipped out into the yard to catch a bit of fresh air. Suddenly I heard near the rear door violent quarreling.

I stepped out to see what it was all about. A group of British and American soldiers, who had just finished their refreshment, were arguing with a tall German soldier about the proper method of attack. But the German, who spoke fairly good English, replied in a firm voice, bringing out his arguments in the fashion of a lecturer. Tommies and Yanks stood around in a group listening intently, admiringly.—

Funny world this!—

I returned to headquarters and reported what I had seen, making also recommendation for better organization and for correction of some minor defects.

[*To be Continued.*]

Surgical Seminar

Conducted by Gustavus M. Blech, M. D.

Case Problems

EXPLANATORY NOTE.—In compliance with the expressed wish of a number of our readers, we begin with this issue a series of case problems of a practical character.

As will be seen from a perusual of the first two cases, the plan is, to submit all available data of a diagnostic character and leave the diagnosis and treatment for discussion in the following issue. This delay will afford those of our readers, who are so disposed, an opportunity to send in their solutions. These will be published, if meritorious, with or without the name of the writer, as desired. The editor of this department will sum up each case under consideration.

It is desirable to impress two things on our readers, namely, it is not and cannot be the intention of this editor to conduct a sort of "quiz," nor is the correctness of the solution presented by him guaranteed, except when the evidence obtained through section or autopsy can no longer be disputed. It is palpable, therefore, that this method of colloquial discoursing is to be a free forum for the benefit of all concerned.

The idea is not original with us, but credit is due the General Service Schools of Fort Leavenworth, Kansas, in which tactical exercises are conducted in a similar manner. There, this method of instruction has been so eminently beneficial to medical as well as to line officers, that we feel confident the following exercises will arouse genuine interest.

Case 1

Mrs. B., age 44, housewife (also milliner), mother of five grown children; youngest about 18 years old. No abortions or miscarriages. Always active and in good health except as noted below. Of her infancy, little can be learned. She probably had a brief and mild attack of measles. She was married at eighteen and, at nineteen had her first child, the others following at irregular intervals. All of the children were born without the assistance of forceps or manipulations.

When 32 years old, she consulted a physician for some backache and profuse menstruation. The physician found nothing strikingly abnormal but, following the usual practice of the time, curetted the uterus, after which (*mirabile dictu!*) she felt much better and, certainly, was freed of her menorrhagia. We can accept with certainty the statement that, on curettage, no secundines whatever had been removed by the currette.

About two years after that event, she began to feel ill at ease and, on a certain evening, suffered an excruciating pain in the abdomen which caused her to collapse. When seen about half an hour later, the pain had disappeared, but the patient presented the aspect of a gravely sick woman though she herself resented any idea of being ill. Her pulse was fast and she looked pale. These phenomena, supported by the admission that she had been "spotting" rather than menstruating the past two or three months, made a diagnosis of extrauterine pregnancy highly probable if not absolutely certain. The patient was at once removed to a neighboring hospital and operated upon. Abdominal section revealed a large quantity of blood in the abdominal cavity and a ruptured right tube. The usual technic was employed. After a stormy two days, the patient made an uneventful recovery and resumed her usual household and business duties.

Three years later, that is to say, when 37 years old, she had some attack of menstrual trouble for which again a curettage was done; after which she felt fine. In this connection, it may be stated that the patient nearly lost her life from chloroform poisoning and that the operation had to be interrupted until heart action and respiration were restored. The last portion of the curettage had to be done hurriedly. Only mucosa was curetted away and again the patient made an uneventful recovery, feeling fine for the following period of seven years.

The patient again noticed some irregularity of the menstrual function but paid little attention to it, having somehow the impression that she was approaching, or had reached, the climacteric.

But, while in the midst of shopping, she had to retire on account of abdominal cramps. The attack lasted about twenty or thirty minutes and ceased. A few days later, another attack,

severer in intensity, occurred. Medical advice was obtained. Physical examination revealed little abnormal. There was no tenderness anywhere in the abdomen. Breathing was rather hurried. The pulse only 90. Bimanual examination and rectal examination revealed no tangible pathology. A suggestion that the patient might be pregnant caused a laugh.

Three days later, the patient has another attack while on a street car and is hurried to the nearest hospital. A distinguished surgeon is called in, because of the emergency character of the case and the absence of the regular attendant. His opinion, after a thorough examination is, that the patient suffers from gallstones. As already remarked, the symptoms do not point to gall-stones, but, the surgeon maintains his point, as no one can tell what symptoms gall-stones will produce.

The family now insists on another consultation. Another distinguished surgeon is called in and suggests the possibility of a calculus in a ureter; but repeated urinary analyses, chemical as well as microscopical, have shown nothing to indicate trouble in the urinary tract, for which reason also an x-ray examination was not undertaken. Subsequent events confirmed the diagnosis of the first surgeon, but neither can be stated at this time.

Required: (1) preliminary diagnosis and reasons therefore. (2) Treatment, if any

Case 2

Miss A.; age 27, clerk; has been ill for a few days. The family physician announces that the patient is seriously ill and suspects an empyema of the chest. You are called with a view to operate.

A hurried inquiry reveals that the patient has always been robust, capable of doing a day's work without undue fatigue. When five years old, she had what was diagnosised as German measles. Recovery was perfect. She has had occasional colds, but recovered every time with or without medicines, the slight cough disappearing permanently.

A year ago, she submitted to a rigid examination for life insurance and passed it successfully.

About a month ago she had an attack of severe pain in the abdomen. She believed that she suffered an attack of intestinal indigestion or fermentation and took a laxative. The pains becoming aggravated, she sent the next day for her family physician who found tenderness in the ileocecal region; diagnosed appendicitis and treated her for it conservatively. Under starvation, opium and the ice-bag, she improved and, after a week was resting comfortably. Nevertheless, she felt weak and ill at ease, though unable to define any symptoms.

About two weeks later, she had a sharp chill and complained of pains in the right chest. The family physician reports that she had, when he saw her, only 100° F. temperature and that went down to normal late in the evening. The next day, he noted but slight elevation of the temperature (99.2 F.). The patient now has no cough, no expectoration, but difficulty in breathing. The facial expression indicates sepsis or some septic process. Palpating the abdomen, the liver margin can be easily mapped out considerably below the last rib. No tumor can be felt either under the liver or anywhere else in the abdomen.

There is no protrusion of the intercostal spaces. Measurement reveals no enlargement of the right side of the thorax.

The heart does not appear to be displaced. Auscultation of the right chest shows vesicular breathing; fremitus is present; but, way below, the vesicular breathing ceases and one perceives amphoric noise. On deep inspiration, the line of demarcation is lowered, yielding increased space of vesicular breathing.

It is apparent that, even with these findings and the history, an absolute diagnosis of the situation is for the present impossible.

The diagnosis of the family physician, though justified from a general point of view, is not borne out by the physical examination.

Of course, the situation being extremely serious, so serious, indeed, as to make some sort of surgical intervention highly probable if not imperatively indicated without undue delay, the patient is sent to the hospital for more detailed study and observation.

Required: (1) The diagnosis (probable) which should be had in mind. (2) The means to be employed to arrive at an exact diagnosis. (3) The prognosis. (4) Surgical therapy, with special reference to site of attack.

Case 3

This case is submitted not as a problem, but as a warning to be guarded and careful in diagnosing so "simple" and frequent a case as gonococcal urethritis.

Even if the following case were an isolated one, I would be justified in presenting it, but I have seen so many with similar histories and with great calamities staring us in the face, that one feels, the truth cannot be told often enough.

Mr. A. D., age 40; married three years to a widow age 35. The man had never been married before. The union had remained sterile. Both desired children and, treatment with two

general practitioners having failed, the wife called on me for a gynecologic examination. On examination, I discovered nothing wrong. She had been married to her first husband about 8 years and was pregnant soon after her marriage. As her husband—an actor—was a good deal away from home, she had a midwife "open the womb." There was some hemorrhage. After that, she menstruated regularly.

Examination of the husband, a robust appearing man, showed normal testicles. He laughed when I asked him if he had ever had any venereal trouble.

"Oh, I had a slight dose of clap when I was about nineteen years old, but a physician gave me an injection and the discharge stopped in three or four days. Probably I had a strain only."

On inquiry, I learned that no other examination except "looking at the penis" was made.

His semen showed complete azoospermia. I at once suggested a Wassermann test for both parties. They submitted to the tests without much ado. Much to my surprise, the wife's specimen was reported back as negative, the man's as 4-plus.

Thinking that there might be some mistake, I consulted with the serologist and he, in turn, assured me that there was no mistake; that he had sent a portion of the blood to another laboratory as a check, and he showed me the report to him which, too, showed "4-plus."

Still doubting, I obtained another specimen and sent it to another laboratory, giving a fictitious name. The next day, the report came back 4-plus.

The husband was told in plain English what the future was likely to bring forth and what to do. In spite of all my efforts, in spite of the written reports, the man appeared skeptical. I finally advised him to consult a genitourinary specialist under a fictitious name and let me know the result and his decision. A few weeks later, I heard through a mutual friend that the couple had adopted a child and were very happy. The husband is supposed to have talked to a physician who is alleged to have discredited my opinion.

This happened in 1911. In 1913, the man went insane and was in a hospital for over a year, where he died from general paresis.

An acute gonococcal urethritis is usually a serious affair, manifesting itself by a profuse discharge, pain, ardor urinæ, with and without complications. That some cases may run a fairly mild course while others resist treatment for a long time, is well known. Very often, the microscope is not essential for a diagnosis.

But, whenever one notices but a scanty, thin discharge from the urethra, the chances are that the patient has no gonococcal urethritis at all, but an intraurethral chancre which secretes a little for a few days. If this be borne in mind, and if facilities for urethroscopy, dark-field examination, etc., be not available the patient should be carefully watched for secondaries. The patient himself is almost certain to overlook a faint rash, or not to recognize it.

All such cases should not be dismissed before several serologic blood tests, made at intervals of a few weeks, show negative results.

How many of the socalled "heart-troubles" can be traced back to an old lues which was overlooked just as in the case cited? One will be surprised, on investigating his heart cases with doubtful etiologic factors, to mention only one class of disease.

We are now much interested in focal infections. That is a proper thing to consider. But, syphilis should be exluded first!

Morally, it is assault and battery with intent to kill, to infect a female with gonorrhea. An enlightened public sentiment may, some day, make it a statutory offense. A male has no more right to pass a venereal disease to a female than he has to infect her with hydrophobia or smallpox.—"Social Hygiene vs. Sexual Plagues."

The General Practitioner

Talks About Professional and Personal Problems
Conducted by WM. RITTENHOUSE, M. D.

Vacations

AGAIN, vacation time has come round. The vast majority of people who are able to take a period of recreation each year do it in the months of July and August. There are several reasons for this. It is the hottest time of the year, when city dwellers feel more than at any other time the need of relief from the hot and dusty streets and the smoky air that make life a burden in the town. It is the time, too, when weather conditions make possible the maximum number of hours spent out of doors.

Other season have their attractions also: spring, with its annual resurrection of life, with wild flowers in woods and field, with its seas of orchard bloom in the fruit districts, with its joyous bird-life of forest and garden, is a time of many delights but also of cold winds and rainy days. The same is true of autumn: nothing can surpass the splendor of its coloring or the golden sunshine of October days; but, the tang of frost is in the air, and the storms of approaching winter render outdoor life precarious.

In July and August, though, the great outdoors is a delight day and night. Even the thunderstorms that cool the air have their delightful side. To sit in a farm barn amid the sweet smell of hay, while a copious thunder shower patters on the roof, refreshes the thirsty fields, and cools the air, is one of the joys never experienced in the city.

The Object

What is the object of a vacation? The question almost answers itself. We all realize that the intensity of modern life makes intervals of relaxation necessary. It is probably true that, with eleven months of work and one of rest, we can accomplish more and better results than in twelve months of continuous work.

Medical men are at a disadvantage in this matter, compared with those in other lines of business. A merchant's business goes on in his absence; but a doctor's work stands still when he is away. His patients go to another doctor, and he is lucky if they come back to him on his return. Sometimes, this loss is partly compensated by new acquaintances formed during his vacation, but usually not.

The family physician of the country town finds it very difficult to get away for vacations, because it is not easy to find a suitable substitute to care for his families in his absence. It is no uncommon thing to find a doctor with a country practice who has not had a vacation for several years. This is an injustice to himself and his family, because he will inevitably wear out sooner than he should.

What Kind and Where

When an outing has been resolved on, the next question is, where to go and what to do. There are a great many ways of spending a vacation, and these depend upon one's taste and the amount of time and money one is prepared to spend. During my years of active practice, a yearly absence of two weeks (with one exception of a month) was all that I felt I could take. But, after that one exception of a month's rest, the results in restored health and vigor were so much superior to those of the usual two weeks that I often thought that I should have been the gainer had I taken a month each year.

My own ideal of a vacation is one spent at sea, and when I say "at sea," I include the Great Lakes, and their islands. Lake Superior, Georgian Bay, the St. Lawrence River, and Mackinac Island are among my most delightful memories. A week on the Atlantic Ocean, another on the Pacific added many interesting features. The passion for the sea is in my blood. My ancestors on my mother's side came from the shores of the Baltic and, far back, they were probably pirates; at any rate, sea rovers. My favorite quotation is from Kipling's "The Feet of the Young Men":

"Do you know the shallow Baltic where the seas are steep and short,
Where the bluff, lee-boarded fishing-luggers ride?
Do you know the joy of threshing leagues to leeward of your port

On a coast you've lost the chart of over side?
It is there that I am going with an extra hand to bail her,—
Just one able long-shore loafer that I know
He can take his chance of drowning, while I sail and sail and sail her,
For the Red Gods call me out and I must go."

Next to the sea I love the mountains. To climb the Rockies or the Selkirks, to live in the thrills of Grand Canyon, the Yosemite, or the Yellowstone, is not only physical rehabilitation but mental and spiritual inspiration. To study the mighty forces at work in the glaciers of Alaska, British Columbia, and our own National Parks, is to be lifted above the commonplace for the rest of one's life. After one has felt the spiritual uplift of such things, life will never again be quite the humdrum affair that it is to the bulk of the race. Even the hills and valleys of the Middle States have a story to tell to him who has eyes to see, a story full of interest and one that will help to make a vacation something better than the empty, idle waste of time it so often is.

The first essential of a vacation is change—change of surroundings, change of food, change of thought. The second is, to make the change add something to our pleasure, not only at the time but afterwards. There is no better way to do this than to cultivate an interest in nature all around us. Among the things that will do this are the study of plants, birds, insects, or the landscape. None of these require expensive outfits or hard study. A pocket lens for plants or insects, an opera glass for birds, are all the equipment needed. Perhaps one does not feel an interest in the study of nature. Then why not cultivate an interest? Thousands would do it if they realized how much pleasure it can add to life, and how easy it is. Many imagine that it involves a lot of hard, dry study. Not at all. Learn *how* to go at it, and every step is a delight.

Vacation Reading

Some like to read much in vacation. This is all right provided one reads something worth while. I do not mean by this necessarily something "solid." Read all the fiction you like; however, when there is so much good fiction, why, in the name of all the gods at once, should one welter in the awful slush that is turned out by the ton—stuff that is ridiculed even by the writers of it? One of the most prolific of these said of his book in an interview: "Yes, I know it's rot! But if people want that sort of stuff, I am willing to supply it. It pays better than a gold mine." Can you blame him? Yes, I think we can. But blame still more the silly crowd that creates the demand.

There are plenty of books light enough for vacation reading and yet so clean and wholesome as to leave no bad taste in the mouth. There is one that will be read by thousands of vacationers this summer and deserves to be read by thousands more. It is "Maria Chapdelaine," by Louis Hémon. My attention was called to it by a reviewer who spoke of it as another "L'Abbé Constantin." Having always been an admirer of that charming story of a generation ago, I took the first opportunity of reading "Maria Chapdelaine" in the original. And I was not disappointed. Any book loses something in translation; some lose more than others. There is a certain delicate perfume (we may call it) which evaporates in passing through another mind attempting to express it in another tongue. Still, it is better to read a good translation than to spell one's way through the original, if one is not perfectly at home in the language. It is simply a choice between a good translation and a poor one. Your own will be a poor one if you have to use a dictionary in every line. A pedant once said to Beecher: "Never read a translation if you can read the original." Beecher replied, "Never read the original if you can get a translation." I would slightly modify both dicta and say, "Read the original if you are well versed in the language; otherwise read the best translation you can get."

"Maria Chapdelaine"[1] will be read in translation by most readers; and it is just as well, for some of the words of French-Canadian *patois* are not found in any dictionary. The scene is laid in the backwoods of Quebec, up in the Lake St. John country. The book breathes the freshness of the primeval forest and pictures the delightful simplicity of character of the *habitant* at his best, as he used to be drawn by the late lamented Dr. William Henry Drummond, of Montreal, whose *habitant* poems were the delight of readers twenty years ago. While there is a tinge of tragedy in the book, it is not without delightful touches of humor: for example, the horse named "Charles Eugène," and the "hired man" who talks to the stumps that stubbornly resist his efforts to dislodge them.

Another good book for vacation reading is Mr. Bok's Autobiography which I mentioned in January. [It was reviewed in the December, 1921, issue of this journal, page 886.—Ed.]

[1] Since this article was written, it has been announced that 349,000 copies of the book have been sold in France alone—100,000 copies more than Zola's best record.—W. R.

Still another delightful piece of humor is "The Three-Cornered Hat," translated from the Spanish of Alarcon; a quaint picture of Spanish life of a hundred years ago, with harmless fun and the defeat of trickery by shrewd counter trickery.

Those who enjoy reading books on popular science will find a great deal of pleasure in two recent "best sellers": the one somewhat local and yet very interesting, the other of universal interest. They are, "A Naturalist in the Great Lakes Region" (452 illustrations), by Professor Elliot Downing of the University of Chicago; and "The Minds and Manners of Wild Animals: A Book of Personal Observation," by Dr. William T. Hornaday, director of the New York Zoological Park.

The former treats of a district with which many of us are familiar and which is full of features of intense interest that we have never noticed because no one has pointed them out. The author is an eminent teacher and naturalist who knows every foot of the region. A few of the chapter titles will convey an idea of the interesting character of the book: "The Changing Face of Nature," "The World in the Making," "The Glacial Period," "Lake Chicago and the Old Shore Line," "The Dunes, and their Plants and Animals." The St. Lawrence River and the Great Lakes that feed it form one of the most wonderful geological object lessons on the globe, and this book will help to bring that lesson to the attention of nature lovers. Whether a man be a doctor or a merchant, a poet or a farmer, here is a subject that can add much to the pleasure of life. I quote from the author's preface:

"There is no commonplace; the most dully monotonous environment is full of wonders, if vision can be enlarged to apprehend them."

"The several type regions are treated in separate chapters so that one may take it as a companion into the Dunes, the forest, the prairie, the river valley and learn by means of the brief descriptions and illustrations to identify the plants, animals, and physiographic processes encountered, and appreciate something of their meaning."

Doctor Hornaday's book, "The Minds and Manners of Wild Animals," is pronounced by the book critic of the *Chicago Tribune* to be one of the most interesting books ever written. The author's international reputation as an authority on all matters connected with wild animals is an assurance that the facts set forth are scientific, which is another way of saying that observation instead of theory is their basis. The inherent interest of the subject is greatly enhanced by the author's delightful style. It is one of those books that tempt one to read on and on into the "wee small hours"—just one chapter more and then just one more. When Mark Twain's, "Innocents Abroad," was first published, more than fifty years ago, I was one of those who finished it at one sitting, at four o'clock in the morning (I was young and foolish then); and I predict that there will be readers of this book who will be tempted to do the same. To my mind, there are few more fascinating studies than that of the mentality of animals, and the immense sale of this book proves that an increasing number of people feel the same way. I believe that many readers will agree with me in hoping that the distinguished author will some day write another book on the *domestic* animals.

Hunting, Fishing and Other Sports

A vacation must depend much on taste. Some love to hunt and fish. I have no criticism to make on those who enjoy those sports. I lost my taste for killing things years ago. My growing interest in the mental life of animals gradually destroyed any pleasure I could feel in depriving wild creatures of that life which is sweet to them as it is to us. I am not an extremist; I recognize the necessity of killing animals for food, of destroying vermin, and especially of sacrificing some animals to scientific experimentation for the purpose of discovering means to control disease. I could kill a wolf, a tiger, or a serpent without the slightest compunction, just as I could do the same to a murderous criminal; but, to gloat over the glazing eyes of a dying creature brought down merely to show the hunter's sureness of aim, seems to me unworthy of a human being. So, for myself, I do not hunt or fish, because I can get more pleasure out of shooting the wild creatures with opera glass or camera. Making friends with them so that they trust me is best of all. It is remarkable how quickly they learn where they are safe. Over in Canada, a little way east of Detroit, near the village of Kingsville, lives Jack Miner, a farmer who has made his farm a game preserve where wild birds are safe. He began with wild geese. They learned quickly that Miner's farm and pond made an excellent road house to stop at for rest and refreshment, on their journey north in spring and south in autumn. So rapidly did they spread the news among their brethren from Labrador to Lake Winnipeg that his visitors increased yearly until it took $700 last year to provide them with corn for lunch. This was pretty hard on his bank account, so the Canadian government assumed the burden and made Mr. Min-

er's farm a national bird preserve. He has been invited to lecture about his methods in so many parts of the country that he has had to refuse many for lack of time. I am told that he is writing a book, and I feel sure it will be interesting. One can not help wondering by what mysterious telegraphy these birds communicated to their fellows the information that here was a small spot where they could trust mankind. The wild goose is one of the shyest birds known, yet the birds eat from Mr. Miner's hand.

Nature Study

For vacation study of nature, very little equipment is required. For botany, one needs a magnifying glass and a book. One can buy pocket glasses of one, two, or three lenses that will magnify from two diameters up to ten or twelve. I have used one for fifty years that cost three dollars and has three lenses of different powers which, when combined, magnify about fifteen diameters. It fits into a little folding box of walnut. The box unfolded forms a stand with mirror and condenser. Folded, it forms a box the size of a pocket hypodermic case, readily carried in the vest pocket. It is just the thing for studying plants, insects, and the structure of rocks and fossils. This little piece of ingenuity has given me more pleasure than almost any other bit of furniture that I possess.

People who do not care for botany usually have approached the subject in the wrong manner. If properly presented, it will interest and attract almost any one. I have seen students who seemed to think that the whole object of botany is, to learn the names of plants. That is putting the cart before the horse. The chief object should be to cultivate the art of *observation*. When you meet a man and learn his name, that is only the beginning of your acquaintance with him. So with a plant; learning its name is important and necessary, but that is only getting an introduction. You are now ready to cultivate the acquaintance of your new friend. Every plant behaves in a little different manner from every other, and some of them display a degree of intelligence that is marvelous. For example, you may be familiar with the salvia, you may know its name and admire its wealth of bloom, but, when you study its flower with book and lens, you see something that strikes you with astonishment, wonders that you never suspected.

A good way to begin the study of botany is, to take two or more plants that belong to the same family, and try to discover *why* they are classed together. In this way you get the key note of nature study, which is: *Comparison based on observation.*

For a beginner, I know no better book than Gray's, "How Plants Grow and Behave." I have seen some that claimed to be better, but they did not fulfill the claim.

For the study of birds, one needs a bird-book and an opera glass, or, better still, a field-glass. Just now, it is possible to get the powerful binoculars used by officers in the war at a price about half what they formerly cost. I have seen lately a sixty-five dollar glass for thirty dollars, and a twenty-seven dollar glass for thirteen. Such a glass is a fine companion on any vacation, but especially so for bird study. It brings a bird up so close that his respiration is visible; while his markings are as plain as if you held him in your hand.

There are plenty of bird-books printed in colors, with descriptive text and of pocket size and shape.

For collecting butterflies and other insects, one needs a book, a net, and a small bottle of spirits of camphor with a dropper for killing the specimens instantly and painlessly. Some use chloroform, but the camphor is just as effective, and there is no danger of accidents.

I will take up the vacation study of geology in the August issue of Clinical Medicine.

2920 Warren Ave.

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[It might be an enjoyable pastime to read reports from some of our readers concerning their vacation trips. We shall be happy to consider a limited number of such travelogues for publication. Let them relate the results of your observations, and let them be illustrated—if possible.—Ed.]

Good Medicine

Let us learn as we go, but not forget what we know

Conducted by GEORGE H. CANDLER, M. D.

In Re: Conan Doyle and the Spirits

"STERILIZE the needle, Watson, and give me at least half a grain, for I am about to emulate the Witch of Endor and raise, and commune with, the spirits of those who have departed this life. Your limited information along these lines, my dear Doctor, is truly deplorable and I have an idea that, if you, too, would resort occasionally to the use of the principal alkaloid of papaver somniferum, you might also see things that—under certain circumstances—are distinctly visible to me."

Conan Doyle, of course, never made Sherlock Holmes say anything like that, but he should have. After hearing him lecture, I am at a loss to understand how he came to overlook such a wonderful opportunity to popularize Spiritism.

According to Sir Arthur, there is, after all, no very "great gulf fixed" between those who are here and those who have "gone on." As a matter of fact, the spirits of our friends, relatives and ancestors are—or some of 'em are—"carrying on" over there very much as they were here. It is, we are told, even possible that Aunt Mary has her pet cat or Bill Sykes his brindle bull to cheer them along their celestial way. There are, of course, "spirits" and "spirits;" that is to say, there is an ethereal aristocracy and a ghostly *hoi polloi*. And, if I do not entirely err, *hoi polloi* are more or less earth-bound—that is to say, they were while on this mundane (but fairly comfortable) sphere, so entirely taken up with distinctly terrestial and personal matters that, now they *are* ethereal, they can't rise above our atmospheric belt but have to float forlornly around—low down, so to speak—waiting for some medium or specially "sensitized" person to ask them whether they "remember the day Uncle Joe bought the lawn mower" and what it was Aunty Sue said when he ran it over her bed of pansies. Simple questions like that one might reasonably expect *hoi polloi* to answer—and they are said to do so, more or less (usually less) intelligently. The spirit *élite*, however, are, it seems, still very difficult of approach and, even with excellent introductions, it appears quite impossible to get a word from Queen Elizabeth as to her opinion of Lloyd George, and not a single whisper has come from Beethoven or Bach expressing their appreciation of—or disgust at—the music of 1922. Neither has Oliver Cromwell said a word about how to handle the Irish situation. Had I a reliable medium, I should try hard to get an expression of opinion from Cleopatra relative to the up-to-date siren and, if it were at all feasible, should certainly interview that lady of Holy Writ who "painted her face and tyred her hair" with a distinct view to vamping the passing hosts of Israel, only to get thrown out of the window for her pains. I should like her to tell us what she thinks of the *jeune femme* of the present day. Her judgment might be startling but—coming from "beyond"—it would unquestionably be just.

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But, alas! as I have said, it seems extremely difficult even for Sir Arthur to get in touch with the worth-while spirits, and those who can be reached seem to have suffered more or less of an intellectual shock before or at the time they died. I suppose this is to be expected; for, it must be disturbing, to say the least, to see your physical self being filled full of embalming fluid and then dressed in a suit you never, *never* would have been guilty of being seen in. I know, *my* mind would wabble for eons afterwards if I had to watch my late familiar shell being put into a fifty-dollar casket for which the urbane undertaker is going to charge my bereaved family three or four hundred dollars. Take it all in all, perhaps the modern spirits, with whom our leading mediums stutteringly communicate, have a right to be intellectually woozy. Yet, when it comes to *spirits*—beings not subject to the laws of time or decay—why can't we, now and again

at least, hear from some of those who weren't approaching paresis before physical death but went out and up at the very moment of supreme accomplishment, their ashes, for example, with those of other heroes, being "in one red pyre blent"? Where are the spirits of Saul, of David, of Ulysses, Achilles, the Caesars, Agrippas, Pompeys, Platos, Horatio—who kept the Bridge—Artaxerxes, Sven and the host of Vikings, Alfred the Great, William of Normandy, Columbus, Vespucius, Mrs. Eddy, John Bunyan and all the rest of the won-der-ful people who have lived, fought, loved, laughed and toiled that this world might be the excruciatingly funny place it is at this particular moment? Why don't *they* drop us a cheering word? Something intelligible, coherent and informative?

Then, too, if man persists as an individual, or, as we are informed, as a "spiritual edition of himself," where are the spirits of *all* our ancestors, back, away back, to the time of Eden—or, if you prefer it, to the time of the Neanderthal man? What *are* they doing and how do they adapt themselves? If you and I, *chers amis*, are to insist that we are going to be in the spirit world very much as we are here, what ground have we for supposing that all the countless and varied billions of other distinctly human beings who have preceded us are not crowding space in their distinctly antique form? And, if they are, and spirits can communicate with mortals, how is it none of them have vouchsafed even a word of information along the ages?

If you begin to think about it, you are going to arrive just where you might expect to get—nowhere! And, even if you reach a conclusion which satisfies your inherent (or inculcated?) desire to be immortal, you must realize, if your grey matter is still functioning, that the soundness of your theories will yet *remain to be demonstrated*. You can *prove* nothing and will *know* nothing until you know it all—or remain in perpetual and blissful ignorance.

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As I listened to Doyle, a most ridiculous thought came unbidden into my head. I have—as doubtless you have too—been an unwilling guest at awful, lugubrious family "parties" where, after several hours of torture, ranging from looking at the family collection of photos to hearing Jeanette "play her piece" on the piano (which needed tuning badly) and Pa his "favorite records" on the Victrola (motor needing graphite), the time came for you to begin to descend the front steps; here you shake hands vigorously with your late tormenters and enthusiastically exclaim, "We've had a *most delightful time!*" to which abominable falsehood, Pa, Ma and the whole falsifying family reply in a single breath, "So glad to have had you; *be sure to come again!*"

So we still here and more or less afraid of the dark—delude ourselves into thinking that the spirits of those departed had such a "delightful time" while here that they must want to "come again." THINK IT OVER. Would You desire to come back? Would you *really* want anyone you had well and truly loved to return to this earth once they had left it? Isn't the latter desire—if it exists—based entirely upon selfishness? The wish to have again with you one who made life's journey more tolerable for You?

Further, isn't all this infantile attempt to "communicate with the unknown" born of fear—of a yearning to have something or someone to lean on in the last extremity? Are not those whose affections have led—or now lead—them to seek communication with *their* "dear dead" distraught by grief, and is it not rational to assume that under such mental conditions the messages they receive—usually puerile enough—are merely mental emanations from the medium they patronize? We do know *something* (not much) about thought transference and telepathy, but it appears to me that we now know, as we have known and shall continue to know, nothing whatever about what follows physical death!

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After half a century of close contact with my fellow man, well, sick, dying (and dead), I am of the firm opinion that nothing could be more disastrous than to possess such knowledge. Not one human being on the earth today can tell what will happen to him or those close to him between the next rising and setting of the sun; how, then, can one cherish even a faint hope of getting a glimpse of what awaits him beyond the grave? Why should one want to? Cannot we be content to leave that in the hands of ONE "Who doeth all things well"? Must our vision be so restricted that we imagine the spirits "who see God" to be but vaporous images of our selves?

Why is it that the ordinary intelligent person is cheered by hearing from Doyle and others that there are marriages in heaven—though no physical union and no babies? If *you*, my esteemed friend, have been happily married to one wife here and can think of no greater bliss than to be reunited to her in Heaven (or Spirit-Land), remember that there

are countless hosts of your fellow beings who would be distinctly uncomfortable under such circumstances and, if we are to retain any of our identity and ability to recognize those who have been very dear, or just temporarily dear, to us on earth, there will (it is quite obvious) be some very embarrassing times for a great many spirits of both sexes!

If, moreover, we are all to be transformed into "our mature selves at our best"—that is to say, if Grandpa will be there to greet us, NOT as we knew him, but in a state of (vapo-real) perfection which he barely attained in his physical prime, how are we to adjust ourselves? To us earthlings, Mother is *Mother*, and, children that we are, if we think at all about a meeting on the further shore, we visualize MOTHER *as we knew her*, waiting to fold us once again in her loving arms. Grandfather must certainly still be Grandpop, or something will be lacking, and Dad, why, if his shade came to greet us with a mane of flowing hair instead of the familiar shiny dome, we'd pass him up as fraudulent. WE SHOULD!

All this only, IF we insist upon being so absurd as to try to measure spiritual (Heavenly, if you prefer the word) things with our dull human imagination. If we can only be intelligent enough to REALIZE that the brain with which we think, the eye with which we see, the ear with which we hear, and all the wonderful conglomeration of fluids and tissues through which we here move and have our being, *die* and are resolved into the elements, and that all the countless impressions we have received during life perish as our cells cease to function, we can at least *sense* the wonderful possibility of the spirit returning whence it came—GLORIOUS as ever and unsullied by its brief sojourn below—prepared to tread more wondrous paths, to animate, perchance, some higher organism in another sphere and so continue throughout Eternity. The personal Heaven, the "persistence of ourselves" after death, savors to me of the child's faith in fairies and fairyland. The Spirit, if it be anything, must be "of God"; if "of God", then immortal. And, when we "put on *immortality*", it is good to think that there will be nothing whatever *mortal* about us. At least, I live (and shall ultimately die) in that hope. I am not sufficiently in love with *mortal* things to desire their perpetuity.

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Therefore, I venture to express the opinion that Sir Arthur Doyle, instead of benefiting, is befuddling the public by his attempt to popularize Spiritism and, until several perfectly sane and unemotional men have received many lucid messages from spirits already occupying their places in the Spirit world (wherever that may be), I shall think that we, who have charge of the bodily welfare of the people, should discourage such attempts to "pierce the veil" as may come to our attention, explaining kindly but firmly to the adventurers that the body terrestrial is so constituted that it cannot possibly really conceive — much less communicate with — the body celestial! "Eye hath not seen nor Ear heard, neither hath entered into the heart of man the things which God hath prepared." Surely those who are "guided by the Scriptures" need no such support as Spiritism could afford! On the other hand, those who regard Life from a strictly scientific view-point could only look upon communications from the Spirits or even Spirit pictures (they *are* rather disappointing things) as emanations partly of psychic partly of physical origin—something interesting, perhaps, because difficult of explanation, but decidedly of no real importance.

The individual who is affected most profoundly by such teachings is the average man or woman who has a moderate degree of education and essays to think about other than the more obvious things. To such (and the illiterate), Life and Death are profound and dread mysteries; and if, as is usual, they have been cheerfully taught that they must, according to their deeds in this world, go to "Heaven" with its harps and angels, Sea of Glass and Marble Palaces, or "Hell" with its pits of flaming brimstone and hooted and horned devils provided with tridents to prod unhappy souls—they naturally eagerly seek for any source which will afford comforting information regarding the present habitat of those they have known and who have "gone before."

So far, at least, no one, fortunately, has received a message from a spirit sojourning in the "nethermost pit"—and, for that matter, none of the messages I have heard of seem to have come from spirits definitely in Paradise. All of them seem to be extremely vague as to their location, though one writer states that a communicating spirit "had seen Christ, but not God."

Such cheerfully vague messages may, doubtless do, hearten those who "are afraid to die" as also does the conveyed idea that Spirit Land (as known to the few communicating spirits) is after all but a beautiful earth where "the trees are greener, the flowers more beautiful and the

streams are crystal clear and ever flowing" "Clothes, as you know them," says one spirit, "are not worn but each one is wrapped in a wonderful gossamer vapor, which hides while revealing the form." (I've heard *that* before, haven't you?). And Doyle tells us that, when a man dies, his spirit remains in a species of coma for three days, during which time he (or it) throws off the shock of disassociation with the body and earthly things. Meantime he (or it) receives—in a sort of Spirit hospital—the ministrations of spirit nurses and physicians. Someone else, also afflicted with a too vivid imagination, informed us recently that the "new spirits" (recently deceased human beings) were "washed up on the shore" of a Spiritland sea whence, draggled and unconscious, they were immediately carried by spirits detailed for that duty and slowly resuscitated; later, being passed on to again other spirits who instructed them just how to proceed in their new environment. Ultimately, after a period of probation, they reached the "inner Heaven" from which, I gather, they do not return.

No one, however, seems to have recognized Ingersoll along the shore,—though evidently many eminent physicians, to say nothing of "simply wonderful" nurses have resumed active duty. Trees, flowers, seas, clothes, nurses, doctors—all things of earth! Strange, passing strange, that Spirit Land should be so like our own. Possibly, just possibly, it is because human beings can only describe what they have seen, heard or felt, and the message after all are of unmixed human origin?

I again assert that such pabulum as this is not good for the very people who absorb it most readily and I am almost suspicious of the mental status—or sincerity of those who provide it.

Jules Verne and Conway are delightful and stimulate thought. These "Mouthpieces of the Spirits," on the contrary, play upon, and with, our *souls* and engender phantasies and phantasmagoria which may very well serve to befuddle the individual journeying along the road of Life to Death. To travel this safely, it is highly desirable to pay no attention to *ignes fatui* (fools' fires) or "beckoning hands." The road is well marked, the destination definite, and he who proceeds serenely will observe, shining, in the far distance and growing ever more plain as he advances, one sign which never fails to inspire courage and Faith. That flaming guide is a simple *cross* and bears the superscription:

"In Hoc Signo Vinces"

Only when the Gates of Death have swung shut behind him, will each man know whether he is to continue his journey under other conditions or, having quaffed of Lethes' water, cease—as an *individual*—to be. "A consummation," in my humble opinion at least "devoutly to be wished."

MEDIUMS and spiritualists are like children playing with lighted matches near a barrel of powder which any moment might explode, and destroy them.

—Eliphas Levi: "Mysteries of Magic."

Let's Talk it Over

An American Pioneer Physician

WE are told that memory is the first of the faculties that age invades; that memory is the treasurer and guardian of all things: that memory tempers prosperity, mitigates adversity, controls youth and delights old age. Were it not for this divine faculty, which has been forever memorialized by the Goddess Mnemosyne, the illustrious daughter of Heaven and Earth, life would be plainly humdrum and simply mechanical, from day to day. Were it utterly impossible to link the present with the glories and achievements of the past, life would be barren of many of its most beautiful and supremely delightful moments. Memory has welded men and women so firmly to the Divine, that they live and achieve in the present only in strict accordance with the inspiration of the past.

Because of the active, retentive memory of my venerable friend, the physician Anthony McCandlish Martin, who has reached the ripe old age of ninety-one years, I am enabled to present to the many deeply interested readers of THE AMERICAN JOURNAL OF CLINICAL MEDICINE a story of the pioneer days of medical practice in Seneca county, Ohio. As I write, I am reminded of the verses, by Berton Braley, on the pioneer doctor:

"What has become of the old-fashioned doctor,
The old fashioned doctor we all used to know?
The guide and the friend and the bread-pill concoctor,
The fatherly doctor who helped us to grow?

"Yearningly, I ask for the old-time physician,
Who dosed us up well for whatever went ill,
Who knew all our history, folks and condition,
And always was moderate, too, in his bill."

Truly, the pioneer doctors are worthy of their well earned reward. Their glory shall never die. The whole wide world is their sepulchre. Their epitaphs are written in the hearts of a grateful humanity. Wherever there is speech of noble deeds, and record of faithful, heroic service, their names will hold in remembrance.

"Life is short, indeed!" says this active, intelligent physician, after ninety-one years of tears and laughter. And as I gazed into his happy eyes and smiling, sunlit face, while we sat in my private office and reviewed the intensely interesting things of his life-time, I, too, concluded that life is short, indeed, for it seemed to me that my aged friend was but a boy and young man again, as he related the interesting story I am now inditing.

My physician friend, whose age borders so closely on the end of a century of time, was born on April 15, 1831. Like many more physicians of his time, Doctor Martin was a son of a farmer—one who toiled and sustained his family from the earth itself; an associate in that ancient calling which dates back to an almost obscured period of time, when the men who settled down in one spot and tilled the soil lifted the whole human race from the savagery of wandering tribes to the permanency of a fixed dwelling place, which was the first stage and the sure foundation of enduring and organized society. Through the steady effort of such men, the landowner replaced the nomad. They knew no master and acknowledged no superior save their God. They were truly sun-kissed American citizens, the highest eulogy that can be conferred on any man.

At the time of his parents' settlement in Bloom township, Seneca county, Ohio, Doctor Martin informed me, there were only about a dozen homes in the township outside the hamlet of Bloomville. As he grew to young manhood, he aided his father and brother to clear away the dense timber and, subsequently, to cultivate the land between the "numerous stumps" which latter task often caused him to forget the admonition of his Sunday school teacher, namely, "Thou shalt not swear in a profane manner."

Young Martin with his parents and brothers and sisters lived in an atmosphere of mutual love and all-persuading confidence. Such an atmosphere is always conducive of health, happiness, and long life. The men who were the youth of seventy years ago would seem out of date today. But these men of another generation firmly grasped the real fundamentals of

life. They held to them and applied them to every problem that confronted them. The fundamental principles of human action are, after all, a pretty safe guide to follow in one's intercourse with his fellowmen. They are as immutable as the stars, and the man who follows them, as did this venerable man of my story, will be more often right than he will be wrong.

Doctor Martin was educated in the country district school and, at the age of twenty years, he began a useful career as a country school teacher. He would labor in the fields on his father's farm during the spring, summer and autumn, and teach during the winter months. Always eager to increase in knowledge and learning, he attended the Normal school at Republic, Ohio, for several years, during which time he taught the classes in chemistry.

It was during the winter of 1854 and 1855 that he entered upon his task as a student of medicine. He pursued his first course of lectures in the Western Reserve Medical school, of Cleveland, Ohio. In the following years, of 1855 and 1856, he completed his studies in the Cincinnati College of Medicine, Cincinnati, Ohio.

Immediately after his graduation, he returned to farm work on land which he himself owned. He spent several years at hard labor on the farm before entering actively upon his career as a practicing physician. Fortunately, he had some medical experience while engaged at farm work, for some of his friends and relatives insisted upon his treating them for colds, stomachaches, headaches, and bowel troubles. It seems there was a much closer bond of friendship and of confidence between the doctor and his friends and relatives, in those happy days, than has since prevailed between a struggling young practitioner and his friends and relatives. Today, the old familiar saying, "Strangers are a young physician's best boosters," seems to hold true to its import.

A remarkable feature in the medical history of pioneer days is, that the hamlets and villages were seemingly overcrowded with physicians, while the cities seemed to have just the right number. There is no probability that history will repeat itself in our day with regard to the distribution of medical practitioners among the hamlets, and villages and cities. However, it probably would prove a wise move if an equable division of the medical men were to be made with regard to their location of service.

Doctor Martin's friends and relatives repeatedly urged him to abandon farm labor and open an office in Bloomville, which, at that time, had a population of about four hundred. There were four doctors in active practice in the hamlet, at the time, and the doctor wisely decided that another physician would prove both unfortunate and disastrous to himself as well as to his numerous colleagues, if he were to locate there.

Finally, he concluded that he ought to give up his farm work and devote his time exclusively to medical practice. He located in the small hamlet of Omar, about thirteen miles from his farm home. He remained there for six months, then moved to Republic where he spent another six months. He was the only physician in Omar, but he had five active competitors in Republic, which had a population of about one thousand and was the most active business village in the county.

Considering the fact that Republic is only nine miles from Tiffin, the county-seat, and but five miles from Bloomville, ten active, wide-awake doctors, at that period of medical history, were surely "a goodly number" for the village and hamlet. Fortunately, all seemed to prosper, professionally and financially, with the exception of Doctor Martin.

From Republic, Doctor Martin went to Xenia, Ohio, where he remained only three months. It seems that the good doctor could not content himself to sit in his office and wait patiently for patients to arrive. His indomitable determination to remain idle no longer prompted him to leave Xenia and return to his farm. He was always a money-maker and could not endure the financial sacrifice that is so peculiarly necessary for every physician to make at the beginning of his professional life. Consequently, his discouragement caused him to abandon medical practice and resume the tilling of the soil. The next six years of his life were spent on his farm, interspersing the monotony of farm work with teaching in the district schools during the winter months. Again tiring of farm life, he entered upon a useful career as clerk in dry goods stores in Attica and Bloomville. But, during all those years, he could not get away from the urge of medicine. His only motive, at the time, seemed to be to earn a competency sufficient to tide him over the trying days of the first year of medical practice.

It was in the early seventies, when he had at last accumulated enough money to build himself a home in Bloomville, that he opened the office which was destined to be the consulting place of patients for thirty-five years of

continuous medical service. During those active, strenuous years, Doctor Martin was classed as the leader of the medical profession in Bloomville. He had, at last, come into his own. His field of service reached out far beyond the limits of the village, which he had aided, so materially, in every progressive movement for the good of its people. Today, it is one of the very best villages in the county, and its population of nearly fifteen hundred consists of educated and talented men and women and intelligent boys and girls.

During his many faithful years of service, in the various avenues of personal effort in which he indulged, Doctor Martin succeeded in accumulating a fortune of $50,000 and today he lives quietly and happily at the Hotel Shawhan, Tiffin, Ohio. For ten years after his retirement from the active practice of medicine, he was a resident of Washington, D. C.

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Although Doctor Martin is, indeed, old in years, he is young in action and aggressive thought. He indulges with supreme delight in the pleasant, self-satisfying pastime of relating the fascinating story of his long, busy life. He reads the daily press closely and understandingly and keeps posted on the political and religious life of the time. He declares that he will live out the century of time allotted him by his Creator. And, judging wholly by the state of his mental faculties and the condition of his physical body, there is a probability that he may be so bountifully favored by a beneficent Providence. May his ardent wish be gratified! He has already outlived his colleagues of the years of medical practice, the last of the pioneer doctors of Seneca county. He is the sole survivor of an age when the practice of medicine seemed to be but a vocation of guess, of action in conformity with the guess, and of accepting the result of both, guess and action, as purely providential.

Doctor Martin never tires of telling of the wonderful methods of treatment and the marvelous cures that added so much to his fame as a country physician, over sixty years ago. We know today, that empirical medicine was more noticeably apparent in his days of practice than it is in ours. Today, medicine is reasonably placed on a more scientific basis, notwithstanding the undeniable truth that empiricism will ever remain a potent factor in both diagnosis and treatment.

In those balmy days of pioneer medical practice, physicians observed symptoms of disease without any thought along the line of scientific research. They prescribed drugs in the treatment of the sick without any tangible idea relative to a scientific basis upon which the use of remedies is founded. They only observed and treated disease, simply because of their empirical sense of symptoms and effects of remedies. They invariably failed to hold their thoughts in leash until the scientific trend of their minds could influence them to delve more deeply and more intelligently into the direct causes of disease.

Even in our day of advanced and continually progressive medicine, many direct descendants of those same pioneer doctors may be found listed among truly scientific followers of the calling of Esculapius. Seemingly, they have not advanced above the plane of their conscientious forebears in medical practice. That is why we are convinced that empiricism will always manifest itself in diagnosis and treatment. Truly, old methods are, ofttimes, the easiest and most convenient to employ, even in this new day of scientific medicine.

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The diseases most prevalent in Doctor Martin's early experience as a practicing physician were flux, ague, milk sickness, blood poisoning, bilious fever, typhoid fever, pneumonia, influenza, diphtheria, and acute indigestion

The doctor's saddle-bags contained Peruvian bark, calomel, aloes, lobelia, ipecac, tannin, opium, soda, and a few native herbs. Quinine and morphine were not yet known; nor were hypodermic syringes.

Although blood-letting was almost universally employed in the treatment of inflammatory conditions, Doctor Martin considered it a barbaric and inhuman method of treatment. But he did use, and quite often too, that equally barbaric agent—the mustard plaster, in acute inflammatory cases. And he never failed to make the plaster sufficiently powerful to cause the required blister (and more often blisters) to become large and beneficently useful in allaying the inflammation. Really, it was a most successful method of successful treatment for it never failed to be a potent factor in diverting the thoughts of the patient from the original cause of his indisposition and keen suffering.

That is, no doubt, the real secret of the peculiarly phenomenal success obtained by the pleasant influence of suggestion and autosuggestion in the treatment of the sick in our own enlightened day. No doubt, as the blistered patient gazed smilingly down at the large, bulging bulla filled to the utmost with the alleviating serum of the painfully inflamed tissues of the body, and which was formed in most

kindly sympathy for ultimate relief from intense pain and suffering, he decided that he, too, was but another victim of a common circumstance. He had also been wisely instructed how to use a common sewing needle in minor surgical cases.

In those happy days of medicine, it had not yet occurred to either Doctor Martin or his patients that a much better way of "coaxing" serum from blood might have been used in every inflammatory process. To the good doctor's credit, however, he did discover the beneficial medicinal effect of compound cathartics in reducing inflammation, after he had practiced a number of years.

Today, this venerable physician said to me, cryptically: "Really, I must confess that I did not know much about medicine and its practice in my early years as a legitimate practitioner, but I was always a thoughtful, continually investigating student. As the years passed and my field of service enlarged, I knew that there was much that I should strive to learn in diagnosis and treatment. I did advance in both knowledge and experience, and the habit I formed in my early manhood clings to me even to this day. I still continue to investigate the newer methods of diagnosis and treatment. Try as hard as I may, I can not get away from thinking and reading about modern medicine."

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During our most delightful conversation, Doctor Martin told me of some of the most interesting cases of over sixty years ago. I shall write of but one.

It was in the first years of his practice, that a young married woman came to his office and consulted him with regard to a severe pain in the lower part of the abdomen, right side. He found her suffering from an abscess in the bowels. He sent her home and to her bed. The next day, a traveling doctor (who was a self-styled tapeworm specialist) visited the doctor's patient and sympathetically assured her that she was entertaining a ravaging tenant in her bowels. He knew, from a large past experience, that his tapeworm remedy was indisputably reliable and would relieve her of her unwelcome tenant in a very few hours. And for such effective service his fee would be only ten dollars in advance. That's the way he did business, just as all quacks have done before and since his day.

Fortunately for the young woman, she hesitated at the crossing of the roads to recovery and death, and requested the tapeworm vender to consult with her physician before the remedy was administered. He went immediately to Doctor Martin's office and was advised to administer his remedy and then tarry around the patient's home until the worm showed its ugly head.

But the vender, who was so sure that his diagnosis was correct and that his remedy would not fail to oust the worm, indignantly refused to comply with the doctor's kind suggestion, giving as his excuse that he was too busy a doctor (a tapeworm doctor, if you please) to sit comfortably in a cushioned rocking chair and wait for the arrival of a tapeworm. The young woman died on the evening of the next day—of acute peritonitis.

Physicians did not operate for appendicitis in those days, for the word was not yet coined. Whenever an abscess developed in the appendiceal region, a knife was used only to open the abscess, with the self satisfying conviction that all had been done for the patient that the science of the day disclosed, and the patient was then in the helping hands of Providence, for good or ill. It was an encouraging fact that some such patients recovered good health and lived for many years free from any pain or suffering.

It is just as much an apparent fact, even unto our day of advanced surgery, that the same thing still happens sometimes. Cases of appendicitis, and many others simulating the disease, have increased so abundantly, that many young men, pursuing courses in medical colleges, contemplate becoming specialists in this particular, and sometimes peculiar, line of abdominal surgery. Truly, there is dire need of real specialists in this phase of surgery. Many times the knife is used with the same intelligence that was manifested by the pioneer surgeons of Doctor Martin's first years of practice.

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Many laudable attributes of character are inherent in every successful follower of the teaching of Esculapius. In order to win commendable success, a physician should be even-tempered, self-controlled, gentle, kind, and always considerate of the feelings and comforts of others. He must have warm friends, whom he should continually hold in growing attachment. He should be great in mind, and in heart as well. His practical common sense, sound judgment, sterling honesty, and noble purpose, combined with unusual intellectual gifts and high character, tend to make him a true physician and a wise counselor. Such a physician was my aged friend, Doctor Martin. He never tried to deceive and was always frank

and open in expressing his convictions, with regard to diagnosis and treatment. He was always kind, generous, and humane in his association with his fellow workers in the profession; in fact, he has a deep appreciation of human nature, and to this may be largely attributed his great success in life. Yet, withal, he was a firm physician, and ever stood fast to his ideals of right.

He fully realized that the path to public favor, in the practice of medicine, is not always a royal one. No man can enter it and maintain himself who bends to every breeze that blows. He always sought to serve his clientele well, but never surrendered his conscientious convictions. As a friend, he has never hesitated or halted. He has ever stood four-square in advocacy and defense of his noble profession.

He was successful because he deserved success. He was successful because he was a fighter who never abandoned a fight until victory had been won. He was successful, because he was a practitioner of highest principles. There was nothing little or mean about him. He was not too little for big things, and not too big for little things in service. He has, at all times, a wonderfully pleasing personality that, at once, draws men toward him. Two of his most striking characteristics are his deep gratitude and his unfailing loyalty to his numerous friends. He never hesitated to respond to a call from one of them. This intensity of purpose he carried with him always in his career as physician and friend.

Some man has said that some men possess "intellectual integrity;" that some men seek to distinguish intellectual from moral integrity. There is, perhaps, a distinction, he avers. It is true that some of us have seen men whose moral integrity we would scarcely dare impugn, and yet, we might be reluctant to admit that they possess intellectual integrity. But a combination of the two, thinking straight and clearly, with the moral safe-guards of a robust integrity, make such a man who is its possessor one peculiarly equipped to serve in any channel of specific purpose. I am pleased to record that Doctor Martin may be truly classed as such a man.

And we are often reminded that every man who conquers his environment and rises superior to the forces arrayed against him is not only a helpful example to the struggling young men of our great country, but he is justly entitled to enrollment on the scroll of those who achieve success; for, after all, only those who merit success should have their names listed in the book of the loyal and the great. In the field of stubborn professional conflict, Doctor Martin earned every good thing that came to him. He was, in the true meaning of the term, a self-made physician.

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He has always lived a life of ardent patriotism, and has firmly believed that the American flag should be respected in every land and on every sea. His intense love for the flag of his native land, caused him to learn its history. There is no man who takes a keener interest in the United States flag than he. He knows its history thoroughly and has written a story of it, better, perhaps, than anyone has ever written of it. The flag is his only hobby now. He designed a flag, based on the constellation Cepheus, which contains thirty-five stars visible to the naked eye. The design is described by Doctor Martin, as follows:

"The flag of the United States shall be thirteen parallel stripes, alternate red and white, and the union of the flag shall contain thirty-five stars, white in a blue field, the stars to be arranged uniform in distance one from another in five arcs in combination, the center of the arcs to be the vertices of a regular pentagon, the radius of the arcs to be equal to one side of the pentagon, and the radius of the stars shall be equal to one-fourth the distance of the stars from center to center."

The five arcs represent the union of the English, French, German, Slavic, and Scandinavian peoples in our great American republic. In limiting the number of stars, it ends with the placing of the Abraham Lincoln Memorial Star on the flag, on that memorable morning of July 4, 1863.

College and university presidents and professors, United States senators and representatives, and the Hon. Woodrow Wilson, while president of the United States, approved the design and complimented Doctor Martin highly on his ardent patriotism that led him to design the flag. President Wilson requested his secretaries of the Army and Navy to make records of the flag for future reference in flag designing. A copy of the flag hangs on the wall in the Lincoln Memorial building Washington. The doctor firmly believes that his flag will be our national emblem some day. May his hopes be realized!

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I believe that the records of medical history will justify the statement that no class of pioneers in America has done more to build up and perpetuate a government of the people, by the people, and for the people, as the immortal Lincoln has everlastingly memorialized it, than the faithful, conscientious physicians. Many of them, like my venerable friend, were

thoughtful students of the times. Like him, they kept abreast of the times by posting themselves on leading questions of the years, and they never failed to voice their hearty approval of every movement for the social and educational uplift of the people. As I have said, no man is so capable to judge human nature as the wideawake, intelligent student-physician, and that is why he advocates every thing that is for the common good of all humanity.

Arthur Wallace Peach, in verses he styles "The Great Question," says:

"When we before the gods in judgment stand,
And deed and purpose in our life are scanned,
This question shall there be ere questions end:
'Were you while living called by some one friend?'"

The sincere physician will not be the least confused when the "Keeper of the Gates" asks him "The Great Question," on that great and eventful day of the final judgment. His answer will be so pleasing to St. Peter, that the gates will be swung wide-open, and he shall hear the joyous greeting, "Well done, thou good and faithful servant; enter thou into the joys of thy reward."

BURTON R. MILLER.

Tiffin, Ohio.

TUBERCULOSIS OR GASSING?

Mrs. Atwood came quietly back into the living room where her husband, Jimmy, was lying on the couch. The doctor had just left.

"It don't seem possible, Jimmy," she said. "You look as big and strong as an ox. Your color's good. I won't believe that Dr. Bardwell. I'm going to get another doctor."

Mrs. Atwood spoke with assumed cheerfulness. She was trying to be convincing in her words—convincing not only to Jim, but to herself.

Jim shrugged his shoulders. "Guess a doctor knows what he's talking about," he said shortly.

"Yes, but he admitted you weren't like TB cases in everything. Said you had most of the symptoms but not all." Mrs. Atwood went over to the couch and kneeled down beside her big husband. "Oh, Jimmy, I can't let you go away from me again. It was hard enough to have you go over there and fight the Germans, and me home all alone with the children. But, Jimmy, I just can't let you fight the TB all alone." Mrs. Atwood tried to be brave but she had to put her head down on Jim's shoulder for a minute because tears would come.

"There, little woman, it ain't so bad,—guess I've got some fight left in me. It's just you I hate to think about, struggling home here all alone trying to get enough food for Bindy and Alice. Guess I could fight better if I could stay here with you all."

"And I'd nurse you, too, Jimmy. It just seems as if you'd had about all a man could stand wounded, gassed and now TB. And off at a sanatorium with a lot of strangers. Jim, it's not right for you to get all the troubles."

"It seems to *me*, Molly, that you're the one who's had about all the troubles. Honest, Molly, you're the wonder in this family." There was no doubt of the affection and appreciation Jim had for his little young wife.

"Well, I'm not going to give up about this. I'm going up to the TB Dispensary and get a specialist to come down here and look you over. Just because Dr. Bardwell's been a good baby doctor for us is no sign he knows you've got TB."

Mrs. Atwood was the type of person who does things at once. Within half an hour she was back at the house with a young doctor from the Tuberculosis Dispensary.

"You say you were gassed in '18, Mr. Atwood?" Dr. Burns asked after a thorough examination and much questioning.

"Yes, doctor, in 1918. It came right after I went back to the lines from the hospital."

"Well, Mrs. Atwood, I'm almost positive your husband has not tuberculosis. He's suffering from the late effects of gas poisoning. His lung tissues have been injured and he has many symptoms of tuberculosis. The treatment is also similar—with one exception. And that exception will please you, I'm sure." He smiled at Mrs. Atwood who could scarcely believe the good news. "He needs plenty of fresh air, sunshine and rest. But he doesn't need to go away from home to a sanatorium."

Molly and Jimmy Atwood looked at each other. Speech was inadequate. Their faces showed the doctor what a burden had been lifted from their hearts.

Jimmy Atwood's case is like that of many, many ex-service men. The symptoms from gassing are, often, cough, sputum, hemorrhage, pain or constriction of the chest, a thickened pleura which causes diminished voice and breath sounds. The patient feels fatigued most of the time and has a shortness of breath. He also has a tendency to exaggerate his symptoms in every way. All these are characteristic of tuberculosis. By physicians, not especially trained in tuberculosis work, these cases may oftentimes be diagnosed as pulmonary tuberculosis. The man is thereupon

sent away from home to a sanatorium for cure.

Dr. John B. Hawes, 2nd, of Boston, says, in an article in the *Boston Medical and Surgical Journal*, "Sometimes, I feel that the world or at least this part of it, is tuberculosis mad." If it is a possible thing, certain doctors in a fear of spreading the disease, upon the slightest hint diagnose their cases as tuberculosis and advise a quick departure to a sanatorium."

Dr. Hawes tells of his experience with thirty-five gas cases taken at random from his files of gas patients. All of the thirty-five had either been definitely diagnosed as having tuberculosis or else were classed as "Tuberculosis Suspects." In only eight instances was he able to confirm the diagnosis and in only one case did he find signs of active tuberculosis. The Dr. Bardwells would have sent these Jimmy Atwoods off to sanatoriums.

The problem of diagnosis is of course difficult. Dr. Hawes says, "How are we going to pick from this group of men, of whom thirty-five are striking examples, those who really have tuberculosis, and separate them from the great majority of their fellows who are suffering from after-effects of gas on the lungs, and especially from the nervous exhaustion and shocks to the central nervous system accompanying it?"

This problem is one of many which must be solved before we can go far in the stamping out of tuberculosis. The National Tuberculosis Association, in its educational campaign against the White Plague, has realized the value of research work.

In promoting scientific and specialized study of tuberculosis among doctors, nurses, statisticians and other keen students, fewer wrong diagnoses will be made. For establishing free clinics and dispensaries with expert physicians and nurses in charge to which other Mrs. Atwoods may come for help, the fund from the Xmas Seal Sale are directly or indirectly used. Make up your mind now to buy tuberculosis seals at next Christmas time, and help other Atwood families.

A DUDE RANCH IN MONTANA

Each time I summer at an unfrequented place, my friends ask, "Did you enjoy your vacation?" and my answer invariably is, "You bet I did." In these few lines, I want to set forth the reason of my invariable success and to give my readers an understanding of what a "Dude Ranch" has to offer.

When I closed my business cares, last summer, and left for Parker's Ranch, I just knew that "Jim" would be at the station waiting for a pale face from the east, and that, despite the exhaustion of my trip added to the inertia caused by the heat of July, I should soon discover a place where, even in the month of August, eating is a necessity and where sleep comes without wooing. If you have never summered on a "Dude Ranch," you may take comfort in the anticipation of a wonderful outing yet in store for you, because there is no other vacation quite like this life. But, let me explain a few colloquialisms as I learned them.

A *ranch* out in the west is a *farm* in the east, only more variable in size, as it may be five acres or 500,000 acres, and the rancher may be a millionaire or "a million hopes"; but he is always a royal good fellow.

A dude ranch is a country resort where a "city man" or "tenderfoot," so called, may obtain academic instruction in frontiership and, what's more, have a lot of sport while improving himself physically. The husky, tanned and wholehearted men who own these "Dude" ranches call themselves "savages"; yet, their most savage instinct is, to take a "Dude" and show him a good time. It is said that, during an earlier date, a wayfarer applied to a rancher for rest and refreshment and was detained by storm for several days. When about to set out again, he asked the rancher how much he was indebted, but the host refused to accept his money. Feeling that he must pay something for his stay, he left a bill on the dresser in his room and a note asking his host to buy something with it when in town. A long while, he returned again by the same road, stopped at the cabin and greeted the keeper with "hello, Jim, do you know who I am?" "Deed I do," said the mountaineer, "you're the [illegible] fellow who thinks my place is a hotel and leaves money when I asks you in out of the storm."

A dude ranch is one of the greatest places to rest and listen to the yarns of the savages, not to mention wedging in a pun of your own while the speaker is catching his breath. At Parker's ranch, all are interested in hunting elk and deer, a heritage from the trappers and traders of the early days. The Rocky Mountains Fur Company seems to have been the chief pelt operator in this mountain country and, unlike the other companies working in other regions, not having navigable streams along which it could establish ports and conduct its operations, it developed the mountaineer with his saddle and rifle instead of the voyageur with his canoe and oar. The trading post was

In the Mountain:—Where You Feel the Grandeur of Creation

replaced by the animal "rendezvous" which was, in many respects, the forerunner of the later cattle "roundups" of the plains. These rendezvous were agreed upon each year, at localities best suited to the convenience of the trade. Hither, in the spring, came from the east convoys of supplies for the season's use and also various parties of hunters and trappers together with such bands of Indians as roamed in the vicinity. These meetings were great occasions, both in the transaction of business and in the round of festivities that always prevailed. There were always unique characters among the "free trappers" and the "lone traders" and the individual expeditions like those of Captain Bonneville, as written of by Irving in his book of that trapper: who acknowledged allegiance to none of these organizations but wandered where they chose, dealing in turns with each of the companies.

It is also interesting how exploits of former days are given a new meaning today. "Bulldozing" a steer, one of the stunts of our present-day frontier shows of the east, has come down from the cattle rustlers' efforts to catch a steer and throw him for branding without the animal showing subsequent rope marks.

When I alighted from the train after a long, but by no means wearisome, ride and set out in the surry with my bag beneath the seat, I felt like a regular country cousin coming for a visit. A good road wound and turned continually up through the ravine to the upper ranch on the edge of a forest of pines, spruce, fir and juniper, with an occasional grove of quaking aspens, and all about us a veritable paradise of wild flowers, making complete my wonderful trip. That night, as a storm came on, I wrote a letter from my cabin, warm and comfortably heated with a pine-knot fire in a hot blast stove which filled the air of my room with mingled fragrance of the pines and the coal oil lamp on my table.

By the first of August, there are none of the mosquitoes so amazingly plentiful at earlier seasons in these regions. The flowers are in their richest glory and magnificent profusion, the air is full of life and energy. Your lungs just naturally fill, your blood leaps, and you begin to realize what it is to be really live. The air is so clear that it confounds distances and gives to objects, though far away, a wonderful distinctiveness.

A few days after my arrival, as I sat on my cabin porch and looked out over the valley, a grand panorama leading into Yellowstone Park with a full view of Everest Mountain, the Yellowstone River and Mammouth Hot Springs to the south, with the Absoraka range and "Hell Roaring Country" to the east, I realized that truly this is a most interesting place in which fortunate events, in both prehistoric and recent times, have made Yellowstone Park what it is today.

In the long gone ages, nature developed this region into its present attractiveness and filled it with wonders that always will command the admiration of men. The sheltering forests grass-covered parks and valleys afford the native fauna fast passing away elsewhere, a secure refuge in all future time and, withall, this region is unfit for the gainful occupations of men. It is truly a fitting inscription that is

emblazoned over the northern entrance gateway to the Park, "For the benefit and enjoyment of the People."

I read in the journal of Lewis and Clark, of August 15th and 16th, 1806, where, referring to one John Colter, they comment on how easily men may be weaned from the habits of civilized life to the ruder but scarcely less fascinating manners of the woods. "This hunter, who had been absent for many years from the frontier, and might naturally be presumed to have some anxiety or some curiosity, at least, to return to his friends and his country; yet, just at the moment when his party is approaching the frontiers, he is tempted by a hunting scheme to give up those delightful prospects and go back without the least reluctance to the solitude of the woods." And, yet, as I sit and meditate on last summer's outing, I yearn for another invitation to saddle a horse and trail through the woods over the hills toward Jardine mine.

CHARLES J. DRUECK.

Chicago, Ill.

SECOND PAGEANT OF PROGRESS EXPOSITION

The second International Pageant of Progress Exposition will be held in Chicago, on the Municipal Pier, from July 29 to August 14, 1922, and in connection with it there will be a Health Show.

In 1920, the first Health Show in America was held at the Coliseum, in Chicago. More than a quarter of a million people visited this Show. The slogan for the Health Show was: "Do you want to live 100 years?" The Health Department of Chicago, the Municipal Tuberculosis Sanitarium, and all the other health agencies in this City and State, cooperated to sell to the people of Chicago the idea that health is a purchasable commodity. In this we are sure we were successful. The death rate dropped in Chicago from 15 per 1,000 in the last five or six years, to 11 per 1,000, a saving of four lives out of each thousand in a year. There being 2,800,000 people living in the City, this would mean an annual saving of 11,200 lives.

In 1921, the first international annual Pageant of Progress was held on the great Municipal Pier, with an attendance of 1,000,000. About one-half of the 3½ miles of exhibits on the Municipal Pier were health exhibits, and thus the second great Health and Sanitation Exposition registered its effect upon our people.

From July 29 to August 14, of this year, it is proposed to hold the second International Pageant of Progress Exposition, and to make it bigger and better than ever. Many new features have been added, among them a wonderful health exhibit which depicts by moving models practically every phase of disease prevention. A Pure Food Show, with scientific demonstrations, will be put on, teaching the people what to eat. The old slogan of "tell me what you eat and I will tell you what you are," will be exemplified there. Recently, in one of the large research laboratories of this country, an ordinary worm was taken into the laboratory for the purpose of study. The life of this worm heretofore had been thirty days. None of its ancestors had lived longer. All worms of this family were born, ate green vegetables, got a little longer and much thicker, and after they had gorged themselves, they died. This particular worm was starved, when it was 23 days old, for one week; then fed for a week and starved for a week; the alternating feeding and starving were kept up for twelve months. In other words, they prolonged the life of this worm twelve times its natural duration, or until it was 365 days old. Many others were experimented on in the same manner with the same results.

It has been said that many of us "dig our graves with our teeth," and that, if we could regulate our diet as the research worker in the laboratory regulated the diet of that worm, we could live many years longer than we do.

I hope the readers of this article may consider well what I have just written and get firmly fixed in their minds that health is our greatest asset; that he or she who has it is indeed rich, and he or she who has it not is poor indeed notwithstanding any amount of property they may possess.

JOHN DILL ROBERTSON,
President, Pageant of Progress.

Chicago, Ill.

CALX IODATA

From the May issue of the *Eclectic Medical Journal*, we reproduce the following remarks by Dr. Fearn, regarding a remedy that is well known to most of the readers of CLINICAL MEDICINE.

Doctor Fearn speaks of calx iodata as one of Doctor Abbott's specialties, the trade name of which is Calcidin. However, he says that it can not be called a secret preparation since the constituents are given as 15 percent available

iodine and 85 percent of calcium compounds. Then he continues, "this combination has proved with me quite stable, keeping for weeks after the bottle has been opened, though it is best to keep it in a cool, dark place and the bottle well corked. Another thing I have noticed, in reasonable doses it does not disturb the stomach, and, while we get the iodine effect nicely, there seems little danger of iodism. While I am very subject to unpleasant effect from iodine, I can take this preparation with impunity.

"*Therapy.*—I would first notice its effects as an alterative. Iodine in the body doubtless causes cell activity, stimulates metabolism and quickens circulation. It increases the amount of waste matter to be eliminated from the body. Now, while we are breaking down débris in the body with iodine, such cell débris may accumulate in the system, and, if not eliminated quickly they may give rise to trouble. We need not only to break down, but we must supply the material for repair, and it seems that the lime in the Calcidin offers the material for repair.

"Only a few months ago, I had a very stubborn case of secondary syphilis, grafted on a poor constitution with a serious scrofulous taint. By perseverance with our good remedies, the man did well. But, ugly sores on the lower extremities would not heal; heavy scabs would form over them, while underneath were the same indolent sores. Though they no longer spread, yet they were there. At this stage, the man was put on calcidin, 4 grains, four times a day. The results were very pleasant, both for doctor and patient. The sores healed, his health improved as did also the terrible mental depression which had followed him so long. Calcidin there was a success. I gave 16 grains per day and it did the work. The dose might have been doubled if needed. From this and from reports coming to me, I am inclined to put down Calcidin as a prime remedy in struma and in syphilis.

"From my studies of this drug, I would not hesitate to name it as an important remedy in goiter. Iodine should be an important remedy in the treatment of phthisis pulmonalis, but in this disease destruction of tissue is going on rapidly enough. Iodine would increase this retrograde metamorphosis; besides, iodine might interfere with appetite and digestion. Here, calx iodata is extremely useful. *It breaks down and builds up.* As I write this, how my mind goes back to Prof. Howe, who contended that in this disease it was only necessary to give arsenic, but he wanted the remedy to be given with syrup of lactophosphate of lime. When I think of medicines to check the ravages of the white plague, I recall that we have many; but echafolta, strychnine and calx iodata are a precious trio. Some investigators are declaring that lime salts are to a large extent deficient in phthisis. Here is a pointer: In croup, both simple and membranous, this remedy has a great reputation. I have not used it in membranous croup; but in simple croup, where conditions were severe, it has done good work. Two days ago, a little boy visiting here from Nevada, where he had just only escaped with his life with croup, was placed under my care. The remedy did well. I prescribed 6 grains of calx iodata in 16 teaspoonfuls of water; of this, I drachm was given in hot water at the commencement of the trouble, and I continued to give such a dose every five, ten or fifteen minutes, according to circumstances. He was soon relieved, went to sleep and slept till morning.

Be careful of your diagnosis. I can not advise it as a remedy in diphtheria. My son has used it extensively in croup, and speaks of it in the highest terms.

"Calx iodata is a good remedy in catarrh, bronchitis, grip, and many other cases that will at once suggest themselves to the practical physician.

"*Dose.*—To my mind, so far, it is the best substitute for potassium iodide, and it is the easiest and seems to be the very best way of introducing iodine into the system. It can be given in doses of ⅓ grain, often repeated, in acute croup or coryza, up to 20 or 30 grains per day in chronic troubles.

"There is one suggestion I would make in conclusion. While giving this remedy, be careful to attend to the emunctories, and especially see that the intestinal canal is working properly."

THE SHOCK THEORY OF THERAPEUTICS

The curative effects of medicines are lost in mystery and most cures are based upon empiricism. We know that capsicum stimulates, as alcohol does. We know that quinine cures certain forms of malaria. We know these things through empiricism pure and simple. The question however, of just how it is all done, has yet to be settled.

In my opinion, the most reasonable and rational theory is, that all cures are produced through shock. To apply small shocks fre-

quently repeated, I believe to be the commonsense way of treatment—theoretically speaking.

Let me give an extreme illustration: A woman who was a chronic sufferer from hysteria was in a run-away. The horse upset the buggy and the woman was thrown to the ground. She was severely shocked but not injured. She never had another attack of hysteria.

This was a great shock. However, if we give the proper indicated remedy, or remedies, in small doses frequently repeated, there is produced a series of small "shocks" to the tissue cells that arouse nature or the sleeping cells, causing renewed activity that remedies the defect; and a cure results.

Take the common drug lupulin. It will cure almost any ordinary case of "nervous irritation" caused by worry and anxiety. This I know, for I have proved it in 27 years of experience. Why this effect is observed, we do not exactly know; but, I believe that it is done by "shock." In dyspepsia associated with mental worry, nothing equals the beneficial action of this drug.

The "shock" that is produced on a large scale may injure the parts; it may be so extreme as to produce death. Contrariwise, a small shock frequently repeated will cause a renewed activity of the cellular element and stimulate the curative properties to become active. To find the "direct indication" for the proper drug or drugs or for other methods that produce just sufficient "shock", is the duty of rational therapeutics.

Shock means, according to the dictionary, "to meet in violent encounter." However, when the "shock" is small and frequently repeated, the "violent encounter" is violent only to the small atomic or cellular elements. Like the "crack of a whip" behind a lazy or sluggish horse, it produces the proper stimulation, so to speak. I feel that the direct application of drugs, or of other means of cure required to bring about their curative effect on the human economy, constitutes a practical application of the "Shock Theory."

Brose Horne.

Gas City, Ind.

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[If Dr. Horne's "shock theory" appears farfetched and even absurd to you (as it did to us), read his letter again (as we did—several times) and think it over. The thing is not quite so peculiar, after all. Of course, we can readily see the influence of shocks being produced, serially, by therapeutic measures such as the electric modalities, mechanotherapy, hydrotherapy and similar methods; also, shocks enter more or less into play in surgical procedures—although we must not confound these with the socalled surgical shock, the prostrating nerve injury from which many patients suffer after accidents, after severe and protracted operations, after ether anesthesia, and so on.

While, then, shocks in succession more or less rapid may be accepted as being active in the therapeutic methods mentioned, it is more difficult to see how, for instance, the drug lupulin can act by causing a series of shocks and thus stimulate the tissue cells to reconstructive activity. Possibly we may receive light by considering the characteristics of radium.

We are told that, in its atomistic structure, radium may be regarded as the quintessence of concentrated energy. Sir William Ramsay has estimated that, if we had the knowledge and the mechanism to control it, we might be able to find and release sufficient energy in a small portion of radium the size of a pea to light the city of London for one year.

Without being able to recall the source of our information, we remember having read of an illustration of the emanations constantly arising from radium without the element itself being exhausted. The writer employed this simile: Imagine a large hall on the floor of which lies a single layer of peas. Now imagine these peas being endowed with inexhaustible energy which causes them to rise and fall continuously. The peas in up-and-down motion would cause a curtain to form and the space of the hall would be constantly full of peas. Yet, of the peas, there would actually be only a relatively small number.

Now, if we can strain our thoughts sufficiently, we may accept the idea expressed by some authors who attribute radioactive energy to many drugs. If that be true, we might assume that these radioactive drugs give off constantly radium-emanations which, acting upon the cells in the organism, exert constantly-repeated tiny shocks. These shocks would surely stimulate the tissue cells to responsive activity —and there you are.

We are not ready to accept Doctor Horne's shock theory of the action of drugs. Still, we must admit that the idea of a purely chemical drug action does not satisfy us either. Nor is the view entirely convincing that numerous drugs act by setting in motion certain enzyme or ferment-actions through which vital processes are either started or stimulated.

It must be confessed that the whole problem "has us guessing," to make use of an eloquent slang expression. We should like to know

how it strikes our readers—after some careful cogitation. To simply read and then say abruptly—the thing is rot pure and simple, does not do. We believe that there is something to this idea.—Ed.]

WOMAN PHYSICIAN WANTED

Dr. J. C. O'Gwynn, of Mobile, Alabama, who owns and directs a small eye, ear, nose and throat clinic, desires to find a woman physician, with several years' practical experience, who could take charge of the clinic when the doctor is absent. She would have to live in the place. The minimum monthly salary offered is $150.

We are informed that the clinic is new and well equipped. It is situated only a few blocks from the business section of the city. The opening seems to be very attractive.

A TOAST

Here's a toast I would drink, to a fellow I shall never know, to the fellow who is going to take my place, when I am called to go. I wonder what kind of a chap he'll be? Will he be of the stalwart kind, who will buck the game for all he's worth, and life's inexorable grind? Will he make the mistakes I've made, in the battles that I've lost? Will he know of the tears I've shed, or the heartaches life has cost? Will he stand with his back 'gainst the wall, with never a glint of fear, and fight for those who have trusted him as the shadow of death draws near? Will he answer the midnight summons, when the wintry storms hold sway? Will he bind up the poor and needy, with never a thought of pay? If that is the kind of a chap he'll be, I am sure the world will know. So, here's to the fellow who'll fill my shoes, when I am called to go.

F. B. Warnock.

Sioux City, Iowa.

MEDICAL NEWS

A communication from the Children's Bureau, at Washington, D. C. (U. S. Department of Labor) declares that all but six of the states of the Union have accepted the provisions of the Sheppard-Towner Maternity Act. We are informed that the duty of administering, in cooperation with the state, the federal funds appropriated "for promoting the health and hygiene of maternity and infancy" devolves upon the Federal Children's Bureau of the staff of which Dr. Ethel M. Watters, of San Francisco, has recently been appointed as consultant.

In most states, the administration of the funds is in charge of the child hygiene division of the state boards of health. Plans under which the individual states will administer the funds locally vary with local needs and resources.

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The acceptance by the individual states of the provisions of the Sheppard-Towner Act has met with especially vigorous opposition in Massachusetts and in New York. It is not only that in these states the conviction is voiced insistently that federal-government interference with matters that belong properly to the police power of the individual states is undesirable, but it is also that the carrying out of the Sheppard-Towner Act would place an intolerable burden upon thickly populated states, like Massachusetts, New York, Illinois, and some others. The consequence would be, that these states would bear virtually the entire financial burden to enable the national house to manifest its generosity (?) indiscriminately.

There are numerous other objections that have been raised against the Sheppard-Towner Bill, one of the strongest being that the appropriations granted are to be expended not for the benefit of the mothers and babies but for the purpose of administration only. It is to be hoped that the objections to the Sheppard-Towner Bill by a number of states will be sufficient to cause reconsideration.

GOVERNMENT NEEDS DIETITIANS AND OTHER AIDES IN REHABILITATION OF DISABLED VETERANS

The United States Civil Service Commission states that there is urgent need at hospitals of the United States Public Health Service for dietitians in connection with the rehabilitation of disabled soldiers, sailors and marines.

The Commission will receive applications until further notice for these positions. Applicants are not required to report for a written examination, but are rated upon the subjects of education, training, and experience.

Full information concerning salaries and requirements, and application blanks, may be secured from the United States Civil Service Commission, Washington, D. C., or the board

of civil service examiners at the post office or customhouse in any city.

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Furthermore, there is urgent need at hospitals of the United States Public Health Service and establishments of the United States Veterans' Bureau for reconstruction aides in physiotherapy and occupational therapy in connection with the rehabilitation of disabled soldiers, sailors and marines.

The Commission will receive applications for these positions until further notice. Applicants are not required to report for a written examination, but are rated upon the subjects of education, training, experience, and physical ability.

Full information concerning salaries and requirements, and application blanks, may be secured from the United States Civil Service Commission, Washington, D. C., or the board of civil service examiners at the post office or customhouse in any city.

A FEATHER-WEIGHT SURGICAL FEE

The Huitota Indians have a medical man of their own. He wears his hair long, loose, banged, and does not wear a hat. While, otherwise, he dresses white style, he goes barefoot.

One Sunday, while coming to San Vincente, he stubbed a toe against a root and lost the nail. He came to me and I dressed it nicely. He is a married man and, the following Sunday, brought his wife in to see me. She was in full dress: a chemise, nothing more. She is a fine looking damsel, but is minus all superior incisor teeth.

He also brought some quills from the tail of a bird called guacamayo. They are a bright red with three or four inches of blue tip, measuring eighteen inches over all.

These were the fee. Geo. Mott.
San Vincente, Caqueta,
Colombia, S. A.

CHRONIC ENTEROCOLITIS TREATED WITH CHLORAZENE

A. B., aged 20 years. Past history negative, except that he had scarlet fever at age 5; good recovery. Both parents living and well. Only child. Of good habits. Height, 5 ft. 8 inches; weight normal—150 lbs. Had usual good health until latter part of January, '22, when he had a mild attack of influenza which cleared up in about ten days.

At that time, he was attending college at a State University and gave a history of drinking milk bought direct from a farmer in a 5-gallon can, which was drunk by himself and several other students.

About one week after getting over his influenza, he began to develop symptoms referable to the lower small bowel, and upper colon. Said he had fever, headache, constipation, loss of appetite and a discharge of a large amount of mucus on going to stool, but no blood. He began to lose weight very rapidly. Came home March 18, '22, somewhat improved. Diagnosis by attending physician was autointoxication and chronic cystitis.

I saw him first time on March 20, '22, in the afternoon. He looked very sick; face flushed; pupils widely dilated; tongue dry, slightly brown with red edges. Temperature 103.6° F., pulse 130. Neck and lungs negative, except that he had a very long chest with prominent ribs. Abdomen distended, gurgling in right iliac fossa, tympanitic on percussion; no rose spots; spleen not enlarged; no tenderness over abdomen at any time. Widal negative. Blood examined for paratyphoid A and B. No occult blood. Stools very foul and liquid containing much mucus. Urine negative except that a few pus cells and a few epithelial cells from bladder were present. I attributed this to the urotropine he had taken for a period of about 12 days.

The temperature ran an irregular course, ranging from 98° F. in the morning to 102° and 104° F. in the afternoon. The pulse ranged from 100 to 130 beats per minute. Because of the great loss of weight, a guinea pig was inoculated with mucus from bowel, but at present time it has not developed tuberculosis.

The treatment consisted of rest in bed; ice cap to head when temperature went to 102° F. or over; plenty of fluids excepting milk was given.

Sodium sulphocarbolate, grs. 7½, was given well diluted four times a day; the bowels were moved daily by enema. Two doses of castor oil were taken during this period, which seemed to make the patient worse.

Then capsules of chlorazene and bilein with agar were given three times daily. After about five days, the temperature came down to normal and the bowels cleared up. The patient has since gained about one-half pound in weight daily until, at the present time, May 1st, 1922, he is enjoying his present good health.

Oliver H. Griffith.
Wheeling, W. Va.

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[The inference is justified, we believe, that the enterocolitis, from which this patient suf-

fered, was due to a bacterial contamination of the milk while attending college. Under ordinary circumstances, he could have overcome that infection, but the attack of influenza lowered his resistance to such a degree that the intestinal infection could develop.

The internal employment of chlorazene is fully established by this time, sufficient evidence of its usefulness and, also, its freedom from danger having been published. It seems to us that the prompt recovery after the administration of this powerful antibacterial remedy, constitutes additional and convincing evidence in favor of intestinal antisepsis in enterocolitis.—Ed.]

JUGULATING PNEUMONIA

On page 376 of Clinical Medicine (May), the writer of an article headed "Jugulating Pneumonia" asks "How many of your readers believe that pneumonia can be jugulated."

I will say that I don't only believe, but know that it can be done. I will give an account of one case which will be only one of many.

About 2 years ago, Hon. J. D. Lee, now running for Governor of Oregon, called me by 'phone, saying he was sick and wished me to see him. I found him with temperature of 102°, rapid pulse, marked dullness in left lung, expectorating blood freely with a hacking cough, with chilly sensation, and aching all over. Had been east of the Cascade Mountains and become chilled.

I prescribed a laxative, with aconitine, digitalin and emetine every 25 minutes for 4 doses; then every half hour for 4 doses; then every 2 hours while fever lasted. The next morning, I was surprised to find my patient with temperature normal, the cough having subsided and with no signs of blood in the expectorations. I had given 10 drops adrenalin every few hours until blood spitting ceased.

Now, perhaps the honorable gentleman was cured by Christian Science; but, as there was no longer a dullness of the lung the next morning, I concluded that something had done good. If this patient did not have pneumonia, what did he have?

T. C. Humphrey, M. D.

Portland, Ore.

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[A history of chill, fever temperature, rapid pulse, dullness on percussion, bloody expectoration, may be accepted as characteristic of inflammation of the lung. We ordinary general practitioners call that sort of thing Pneumonia, and we are apt to think of it in capital letters, too. Some highly scientific critics may demand other evidence before they admit the existence of pneumonia; such evidence as can be procured only at autopsy. Then the patient is dead and nothing can avail him any longer. Moreover, if all pneumonias can be diagnosed only at autopsy, it is rather futile to talk about the treatment. To follow out that train of thought logically, the physician who does not admit the existence of pneumonia unless the patient dies had better turn his sick over to others who do something.

Evidence that pulmonary inflammation (*vulgariter*, "pneumonia") can be treated successfully, and that it can be jugulated if proper measures are instituted early in the game, is plentiful enough. Any one who cavils at such clear-cut case reports like the one presented by Dr. Humphrey is—well, there is something the matter with him. We prefer not to say what.—Ed.]

TREATMENT OF PNEUMONIA

Pneumonia is a very dreadful disease and, therefore, any drug acting well in aborting the attack, or in curing it when the disease has fully developed, will go a great way in reducing the high percentage of mortality due to this disease alone.

I have been using Dr. Arthur J. Mathison's socalled specific treatment for pneumonia, for the last four years, and I have had very good results from its use. This treatment consists of a combination of creosote and iodide. If commenced from the very beginning of the attack, it most certainly aborts the pneumonic process; otherwise, it brings the crisis in 3 to 5 days. The very great advantage of this preparation is that the patient is not much troubled with cough, hence it indirectly helps in relieving the overstrained heart's action, avoiding thereby the frequent necessity of using cardiac tonics.

The taste of the mixture is rather nauseous, but it is being flavored with extract of licorice which also helps the normal action of the bowels. In all my pneumonia cases, I am in the habit of using this mixture from the very beginning and, so far, have very rarely met with any fatal results in purely lobar-pneumonia cases.

In cases where cardiac tonics are required, camphor-oil injections or strychnine sulphate (gr. 1/60) injections are given side by side with this treatment. The mixture is to be

discontinued when there is no more fever, and general tonics and expectorants are then to be given.

If the bowels are loose from the very beginning, the preparation may be flavored with syrup tolu or syrup pruni virginianæ, instead of ext. glycyrrhizæ. The mixture is to be given every four hours and should be continued at least for three days, during which time the pneumonic process will show signs of rapid improvement.

I have used iodized calcium and creosote carbonate for some cases, alternating with this mixture, and these too have been found very useful drugs for pneumonia.

The prescription runs as follows:

Creosote	2½	minims
Potass. Iodide	5	grains
Spt. Vini Rectificati	10	minims
Ext. Glycyrrhizæ Liq.	20	minims
Aquæ, to make	1	oz.

Sig. One such dose every four hours.

VALLABHDAS V. MEHTA.

Viramgam, Bombay Presidency, India.

CAN DEADBEATS GO TO HEAVEN?

St. Peter: Who comes here?

Spirit: One who has passed from Earth and would enter the abode of the Righteous and Just.

St. Peter: Have you lived a just and upright life?

Spirit: I endeavored to do so.

St. Peter: Have you repented of your sins?

Spirit: I have.

St. Peter: Have you paid all your just debts?

Spirit: I have.

St. Peter: Are you sure you have paid all your just debts—that there has been none overlooked?

Spirit: Quite sure, St. Peter. I have a reputation for promptness in such matters.

St. Peter: Have you paid your physician?

Spirit: Pardon me, most excellent St. Peter. I did forget to pay my physician; but I am only one of the many who did not pay him and, this being such a little thing to hold against me, I beseech you, forgive and permit me to enter.

St. Peter: Stand aside. As you refused to pay your physician, so do I deny you what you had hoped to be your dues. You may not enter until your physician has been paid.

V. G. VANCE.

Waterloo, Ind.

RAT-BITE FEVER

Rat-bite fever is an infective disease, very common in this part of the world and is caused by the bite of an infected rat. The wound usually heals up; but, after an incubation period of 15 to 20 days, local and general symptoms manifest themselves. The local symptoms are, an inflammatory swelling over the bitten part, formation of vesicles and ulcerations sometimes leading to gangrene. This is followed by a swelling in the surrounding region and also of the regional lymphatic glands, after which there appears an erythematous rash. The general symptoms manifest themselves by an initial rigor, weakness, loss of appetite, headache and fever. Fever continues for 2 or 3 days and resembles the ordinary malarial type, but it is differentiated by shooting pains in the various joints of the body. For the time being, all the symptoms subside; but, after some time, the same symptoms appear again, and a peculiar erythematous rash appears on various parts of the body. This rash takes the form of circular wheals and is first seen on the abdomen and arms. The shooting pains are very common and appear with the onset of fever. Such a course of symptoms continues for a long time, extending in some cases to two or three years; they are allayed by taking sour things such as whey, curd, lemon, etc. As long as the poison remains, symptoms of general lassitude and occasional relapses of fever continue.

As regards treatment, arsphenamine and neo-arsphenamine are the only remedies possessing some definite action in arresting the course and curing the disease.

On this side, the root of Alangium Lamarcki (C. O. Cornacie) is considered as a specific rat-bite fever, and I have seen very good results from its continued use. The root is rubbed up with water and the resulting paste is applied over the swelling and also over the ulcerating patches; the same paste is taken internally in small doses. No other drug has such a definite and curative action in rat-bite fever as this root, when it is applied and used in the way indicated.

V. N. MEHTA.

Viramgam (Bombay Presidency, India).

[In CLINICAL MEDICINE for 1916 (p. 688), we abstracted an article from *Paris Médical* in which rat-bite fever was described as a septicemia. American medical literature is not very prolific on the subject, Musser and Kelly

("Practical Treatment," Vol. iv, 1917, p. 344), for instance, devoting to it only one short page of text. A few journal articles deal with the subject, most of them being listed in the "Quarterly Cumulative Index" of the A. M. A. Among the latest reports may be mentioned the one by F. F. Gundrum (*Calif. State Jour. of Med.*, Jan., 1918), and the one by R. V. Solly (*The Lancet*, March 22, 1919, p. 458).

As is quite natural, the treatises on tropical medicine give more attention to the subject. So, Stitt ("Tropical Diseases," 3d. ed., 1919, p. 405) gives a description of the disease which is, in the main, that presented by our correspondent. The cause of the affliction is a streptothrix, the S. muris ratti, which first invades the lymphatic structures and then the blood, giving rise to septicemia. Stitt says that treatment is symptomatic, but refers to good results having been observed after the administration of arsphenamine.—Ed.]

DR. WILLIAM BEAUMONT AND ALEXIS ST. MARTIN

During the last week of May, when the American Medical Association met in St. Louis, the *St. Louis Globe Democrat* (May 23) called attention to the fact that the official button of this year's meeting was a portrait of Dr. William Beaumont worked in bronze. It was in St. Louis, the *Globe Democrat* points out, that Doctor Beaumont located after his resignation as army surgeon and that city was his place of residence during many fruitful years of his mature life.

It will be remembered by the students of medical history that Dr. William Beaumont, while surgeon in the U. S. Army, published a book (1833) entitled "Experiments and Observations on the Gastric Juice and Its Physiology in Digestion." This book was printed by T. P. Allen, in Plattsburg, and a copy of it is before us as we write. We are very proud to possess this book which is quite rare and by means of which Doctor Beaumont became known as one of the world's foremost pathfinders in physiology.

We may recapitulate briefly that, while stationed at Fort Mackinac as post surgeon, Doctor Beaumont had as a patient a certain Alexis St. Martin whose body had been penetrated by a frightful gunshot wound, exposing the abdomen. In a long series of experiments rendered possible by the aperture left by the wound, Doctor Beaumont made known the mysteries of the digestive organs and not only enriched medical knowledge but laid the foundation of the science of dietetics which has a formidable number of followers of expertness and high repute. He was without the x-ray and without a long list of the appliances and accessories which modern research may call to its aid, but so singularly accurate was his work that many subsequent investigators only reestablished truths which he originally revealed to the world.

What Doctor Beaumont did was a remarkable example of scientific daring and of unaided independence in discovery. At a point then more inaccessible than the farthest confines of Alaska is now, surrounded by wastes of forest and water, and without helpful cooperation of any sort from other trained minds, he brought, within the realm of the known, facts that had eluded and baffled the world's great centers of learning.

Doctor Beaumont's work on the physiology of digestion was not only a remarkable triumph of an American physician but it constitutes one of the important discoveries that helped to establish modern medicine. While we are proud to own William Beaumont as our countryman, we feel no less under obligation to Mr. St. Martin for his unvarying willingness to aid Doctor Beaumont in his elaborate and long-continued studies. Both share equally in the honor that is due for this work.

CHILDBIRTH DEATH-RATE AND INFANT MORTALITY

In the March and April issue of the Bulletin of the Department of Public Health we learn that "23,000 mothers die every year in this country from causes due to childbirth, and many more thousands become permanent invalids." Over and beyond all this we can understand that practically all mothers suffer distressfully although it seems strange that from this natural function so much pain and misery should arise. For many years, the writer has been advocating the importance of having mothers assume what should be regarded as the natural position at childbirth, namely, kneeling or squatting. To the minds of all thoughtful students of this subject, this seems one of the simplest problems in physiology and hygiene, and they maintain that a woman should have as fair a chance to empty the uterus as the bladder or bowels. Most of the suffering arises from being wrongside up. By far the greater proportion of all this mortality and

distress would be prevented if the medical profession and their nurses understood the matter and would have their mothers rightside up instead of flat on the back, working uphill, so to say. The prevailing mismanagement tends, moreover, to increase the fearful infant mortality because of its effect upon the mothers' health. Why, indeed, we may ask, should not mothers and babies have as fair a chance as cats and kittens?

A distinguished Boston woman writes me from her summer home at Martha's Vineyard as follows:

"Dear Dr. Page:—One of your leaflets has come into my hands in which you say that the natural position for a woman to assume during childbirth is kneeling. It may interest you to know that, with the Gay Head Indians on this Island, it is said to be the custom for the woman to kneel and hold on to a chair and bear down; an Armenian woman, a trained nurse, tells me that throughout the Orient the woman kneels, holds on to something and gives birth to the child with very little trouble, pain or inconvenience. Very likely you were already aware of these facts, but I thought I would mention it on the chance."

The editor of a leading medical journal, to whom I made mention of my views on this subject, assured me of his belief in the correctness of my position, stating that in his practice he had found that, occasionally, one of his mothers had of her own volition assumed the kneeling position, and he had of late years made it the uniform method in his practice.

Some years ago, it came my way to coach a titled woman in England through pregnancy, she having run across my book on Babies, "How to Feed the Baby" and, being pregnant, she requested my advice as to the regimen to be followed during the period. Of course, I was glad to set her right; and she went through to the great satisfaction of herself and friends, the birth being practically painless. It happened that, feeling a need for visiting the toilet about midnight she found that her time had arrived, and there, kneeling on the rug, the baby came and she picked him up, marched back to bed, called the doctor and nurse, and all went well. In fact, there was no lying-in-period, as the mother was up and dressed and about the house the next day!

In view of what has been said herein, do we need to look further for the cause of the prevailing dread of maternity which affects even the noblest of women who are still bound to fulfill their holy mission in spite of all the pain and distress, thereby preventing all danger of race suicide?

The prevention of race suicide is not so much a matter of more births as of fewer deaths. Every fairly-healthy-born babe will keep right on living if given a fair all-round chance. One of my nurses has attended at more than one hundred births with never a death under one year; for she teaches the mothers all about the nature and needs of the newborn babe and growing children.

Something like a quarter of a million babies die at under one year of age in this country, every year. This fearful slaughter will continue as long as the present mismanagement prevails, chiefly as to wrong position at birth; namely, on the back and half buried in a feather pillow instead of being put on their belly on a firm hair mattress with no pillow and free from over-clothing. Babies are as truly four-legged animals as are kittens. If they were given the same chance for exercise that the other young animals have, they would develop similarly; growing long, slender, supple and strong, and be creeping around the house in a few weeks, instead of growing fat, soft and ill-conditioned, and likely to go the way of the hundreds of thousands under one year of age.

The S. P. C. A. has forbidden the restaurants to keep live turtles on their backs in the show-windows because it is unnatural and painful. Most grown folk understand that is a disease-promoting position and hence to be avoided. Why shouldn't mothers and babies have as good treatment as turtles!

CHARLES E. PAGE.

Boston, Mass.

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[We can confirm Doctor Page's claims, as to the merits of the crouching position of the parturient woman, and concerning the proper position for the infant. Several of our patients, when in labor, assumed a crouching position of their own accord, and others did so at our suggestion; in both instances with marked benefit.

In the case of little babies, we have encouraged the young mothers to place their infants on their little tummies several times daily, especially after being bathed and being undressed for the night. The babies benefited manifestly from this treatment, developing more healthily; besides being more free from colic and other digestive disturbances. Doctor Page's suggestions are well worth being adopted more generally.—ED.]

What Others are Doing

THE PROBLEM OF GOITER

An enlargement of the thyroid gland, commonly designated as goiter, should always be investigated with suitable attention to the factors that in the individual case are responsible for the glandular enlargement. Goiter may be indicative of hypothyroidism and also of hyperthyroidism. In the former case, the patient shows the evidences of deficient thyroid function, the most extreme of which we know as myxedema and which is accompanied by evidences of physical and mental sluggishness. In the goiter that owes its origin to excessive thyroid activity, there are systemic manifestations of thyreotoxic irritation, such as tachycardia, tremor, nervousness and so forth, a symptom complex which is known as exophthalmic goiter. The latter designation has frequently been objected to because of the fact that the exophthalmos may be absent, and Bainbridge (*Jour. Mich. State Med. Soc.*, April, 1914) has proposed the name "systemic goiter" for it.

Systemic goiter should be differentiated from simple goiter in which, no matter how the great enlargement of the thyroid, there is an absence of thyreotoxic symptoms. Bainbridge declares correctly that it is not the size but the functional output of the gland that counts. In other words, the enlargement of the thyroid gland is of secondary importance, since it is not the size but the activity of the gland which is the determining factor. Even an abnormally small gland may oversecrete and cause systemic symptoms. It is undoubtedly cases of this last-named variety, we believe, that are treated for socalled inner goiter.

It is evident, therefore, that the treatment of goiter as such is really a symptomatic treatment. If goiter is treated by the internal administration of iodine or of thyroid gland, oil may be added to the flame and an already overworked organ may be strained still more. Thus, a patient showing thyreotoxic symptoms would manifestly become worse by the administration of iodine or of thyroid substance. Reversely, if the thyroid enlargement is due to insufficient thyroid acitivity, both iodine and thyroid substance will work satisfactorily and will bring about a better functional activity of the gland.

THE TREATMENT OF GOITER

In a paper presented to the Chicago Medical Society (*The Bull., Chicago Med. Soc.*, May 20, 1922, p. 24), Dr. Sumner L. Koch emphasized that, in determining the most effective method of treatment for thyroid disease, one must consider the patient's age, the presence of a possible etiological factor, the duration of symptoms, their character and intensity, and the patient's physical condition at the time he presents himself for treatment. While thyroid disease is most common in the third and fourth decade of life, without being limited to any particular period, very serious thyroid intoxication may develop at an early age. The author has not observed a family tendency to thyroid enlargement with toxic symptoms, but he has very frequently noted a history of worry, nervous strain and overwork immediately preceding the appearance of the toxic symptoms.

For practical purposes, thyroid cases may be divided into three groups; first, those with thyroid enlargement without toxic symptoms; second, those with toxic symptoms but without exophthalmos; third, those with both toxic symptoms and exophthalmos. The first group includes the majority of thyroid enlargements occurring in childhood, before and at the age of puberty; those which have their onset at puberty and those appearing usually after the age of twenty-five. The enlargement of puberty will usually respond to small doses of iodine if given over a long period in doses of from eight to sixteen grains daily. With older individuals, larger doses are necessary. The use of thyroid extract is sometimes helpful in cases with symptoms of hyperthyroidism.

When pressure symptoms arise, more radical measures are necessary and removal of the greater part of the gland affords the most effective means of relief.

The second group includes those cases presenting toxic symptoms without exophthalmos, sometimes referred to as the toxic adenomas. These patients are intensely sick and in ex-

treme cases their condition is nothing less than terrifying. The first attempt of the doctor is, to get these patients quiet, and bring the pulse down. Rest in bed, an easily assimilated diet, sedatives, and as much fluid as the patient can tolerate are given before any operative procedure is attempted. When the patient is well under control, one or both of the superior thyroid arteries are ligated, with the most careful pre- and postoperative treatment.

The third group have many features in common with the second. Exophthalmic goiter appears a little earlier in life; toxic symptoms are more pronounced, and severe cases with intense toxemia are more frequent. Of 43 patients belonging to this group, the youngest was 8 years of age, the oldest 52. The average duration of symptoms was 11.3 months. Of these 43, 19 showed a metabolic rate before operation of plus 54; 5 were not operated upon; in 5 cases a ligation of the superior thyroid arteries only was carried out; in 11, a primary ligation followed at an average of 2½ months by thyroidectomy. In 5 cases, one lobe only was removed; in 15 cases, a primary subtotal thyroidectomy was carried out. There were three deaths in this group, the only fatalities in the entire series of 176 thyroid cases.

In 6 cases of 82 where toxic symptoms presented, x-ray or radium treatment was used. In each case it was followed, after an interval varying from 12 to 28 days, by definite improvement. In 4 cases in which radiation was not followed within a few weeks by operative treatment, toxic symptoms which had partially subsided reappeared and operative treatment became necessary. This recurrence of toxic symptoms following temporary improvement was observed in only one case in which operative treatment was carried out as recommended.

In addition to its transitory effect, one other disadvantage of x-ray treatment has been noticed. The difficulties of operation following radiation are considerably greater, owing to the formation of adhesions and scar tissue and, unless preliminary radiation is absolutely necessary to render operative treatment possible, it is felt to be a distinct hindrance to further treatment.

THE DANGER OF OPERATION ON PATIENTS WITH TOXIC GOITER

The relation of thyroid intoxication to focal infection has been realized for several years. It has been observed occasionally that removal of infected tonsils brought about an improvement in the thyroid trouble; showing that interference with the normal thyroid function may, in certain cases, depend upon a basic tonsil infection.

Whether operation be undertaken for the purpose of removing a portion of an enlarged thyroid gland, or for the excision of enlarged and degenerated tonsils, or for another cause, it is important to remember that a condition of marked thyroid intoxication constitutes a distinct contraindication to any operative interference whatever.

In an article presented to the Oklahoma State Medical Association, in May, 1921 (*Jour. Okla. State Med. Assoc.*, March, 1922), Dr. R. M. Howard declared that we are called on too often to treat the advanced cases of goiter disease, many of which have been under medical care for months. It is not unusual to have patients come in seriously toxic who have recently been subjected to other surgical procedures, hoping thereby for relief. These were commendable procedures under ordinary circumstances, but extremely dangerous to the lives of patients in such condition, patients whose compensation is barely sufficient to carry them on. Thyreotoxic patients stand any operation badly. The role of focal infection in its relation to thyreotoxicosis has much to support it from a causative standpoint, but attempts at its relief in the face of severe toxicity should not be made and have no pathologic or therapeutic basis to support them. Their correction had best follow, rather than precede the measures instituted for the relief of the thyroid activity.

In the discussion of Doctor Howard's paper, Dr. H. Coulter Todd emphasized the serious possibilities attendant upon operations in case of toxic thyroid adenoma, referring to an unfortunate personal experience of having a patient die within a week from toxic goiter, following a tonsil operation which he had done. At that time, he did not realize the seriousness of disturbing these patients during the height of thyroid intoxication. Some of these patients in this toxic condition, he says, seem to be just barely getting by and it is surprising how slight a shock it often takes to destroy their balance. About thirty-six hours after the operation, which had been done rapidly under local anesthesia, all the thyroid symptoms became aggravated, the rapid pulse increasing until the patient died with every evidence of toxic goiter.

The same point was emphasized by other speakers during the discussion. In preparing patients of this class for operation, for which purpose x-ray radiation is often used, this

treatment must be graduated very carefully. X-ray therapy, Doctor Howard says, is by no means without danger. Under its influence, the gland may be destroyed and a state of hypothyroidism produced if treatment is pushed too far. Furthermore, the changes go on in the gland after treatment has been discontinued. The toxemia may be increased to a dangerous degree even by the first treatment and cases have been recorded where the reaction following Roentgen therapy has been fatal. Finally, increase in connective tissue due to the x-ray radiation makes a subsequent operation more difficult.

The most important lesson, we take it, is that, in all cases of hyperthyroidism that present themselves for surgical interference of any kind, the surgeon should determine carefully whether the thyroid balance of the patient is of such a nature that he can hope to pass through the operation without shock. The preparation in case of active hyperthyroidia consists mainly in rest and in general methods tending to improve nutrition and to secure elimination. If the x-ray is to be utilized, the dosage requires great care lest harm result.

THE DESTRUCTION OF TUBERCLE BACILLI IN SEWAGE BY CHLORINE

From time to time, tests have been made of the effluent from the Imhoff tank at Nopeming Sanatorium, before and after treatment with chlorine, to determine the frequency with which tubercle bacilli are present in the effluent and the practicability of destroying them with chlorine.

A report of this investigation by Drs. John M. Conroy, Bernice Brasted Conroy and Arthur T. Laird appears in *The American Review of Tuberculosis* (Mar. 1922). A standard chlorinating machine, such as is used in treating water, is employed. The daily average amount of sewage is approximately 25,000 gallons. About two and one-half pounds of chlorine are used daily. This is equivalent to about twelve parts per million, or six parts per million during the hours of the day when the flow is assumed to be twice the average. Samples were taken of the effluent as it came from the Imhoff tank before entering the chlorine-mixing chamber, and again as it left the chamber. The untreated effluent was diluted nine times with normal salt solution. Guinea pig injections were made subcutaneously in the abdominal wall. The treated samples were injected undiluted.

Of 24 guinea pigs, inoculated with effluent untreated with chlorine, 21 developed definite tuberculosis, and none of the 30 inoculated with effluent after the treatment with chlorine became tuberculous.

The authors conclude that sewage from a tuberculosis sanatorium nearly always contains living tubercle bacilli.

The use of a chlorine machine is a practical means of ridding such sewage of tubercle bacilli.

Two machines should be installed to insure continuous disinfection.

Preliminary treatment of the sewage is necessary to reduce it to a liquid form, and to prevent the floating of solid particles containing tubercle bacilli in water courses.

TABLE UTENSILS AS SOURCES OF TUBERCULOSIS INFECTION

Cleveland Floyd and Langdon Frothingham (*Amer. Review Tbc.*, March, 1922) report some experiments from the Department of Bacteriology of the Harvard Medical School, Boston, in which a study was made of thoroughly washed table utensils used by patients with open tuberculosis in twenty-five private homes, and of the water employed to wash this tableware. Inoculations of material obtained from the utensils resulted in tuberculosis in one guinea pig; from the wash water, four guinea pigs acquired tuberculosis.

The authors' conclusions are as follows:

1. The table utensils used by open consumptives may occasionally harbor virulent tubercle bacilli even after more careful washing than is customary in the average home.

2. The water used to wash such utensils quite frequently contains virulent tubercle bacilli.

3. From these experiments, it seems evident that the table utensils used by an open consumptive may be not only a menace to the patient himself and to others in his family, but also a general menace when the patient eats in public places. The inference also seems warranted that the dish towel used to wipe these utensils must become contaminated with virulent tubercle bacilli, and the more frequently it is used the more bacilli accumulate, so that, if employed for several days without thorough washing (a common practice in many homes), it becomes more and more a depositor of tubercle bacilli on the just washed utensils. It would seem, therefore, that the only way to control the danger of spreading tuberculosis by such utensils is, to thoroughly sterilize the patients' tableware and the dish towels employed to wipe it, after each meal, and the simplest

method to accomplish this is, to boil them for several minutes.

TREATMENT OF HEMOPTYSIS IN TUBERCULOSIS

Herzen (*Schweiz Rundschau f. Med.*, Oct. 19, 1921) says that, in hemoptysis, absolute rest in bed in the half-reclining position is indicated; the patient must be forbidden even to talk. The doctor must not attempt to take a history of the case at this time, in order to avoid disturbing the patient both physiologically and psychologically. Ice-cold milk may be given in sips. Herzen has avoided the application of sinapisms to the lower limbs and of an ice-bag to the thorax. He uses morphine in all cases in doses of 0.5 or 1.0 cg., (1/6 to 1/3 gr.) two or three times a day. Injections of adrenalin are to be avoided. In order to accelerate the coagulation of the blood, he recommends intramuscular or intravenous injections of pituitrin in a dose of 0.10 cm. (1½ gr.). If the hemorrhage continues, all the limbs are ligated with flannel bands in order to reduce the circulation in the lung and a single dose of gelatin (40 to 60 Gm., equally 600 to 900 grains) is injected. As a last resort, artificial pneumothorax is indicated.

THE CLINICAL SIGNIFICANCE OF THE WASSERMANN REACTION

Albert Strickler (*Jour. A. M. A.*, April 1, 1922) admits that the Wassermann reaction is not a specific test. It is not known what may be the substance in the serum which causes the production of a positive reaction. It is becoming more and more suggestive that a certain drug, that some of the acute infectious processes, and also that certain metabolic disturbances can at times produce a change in the serum which will cause a positive reaction. Thus the Wassermann test has very definite limitations, and in the diagnosis it should be considered a symptom and should be impartially weighed along with the other clinical evidence. In the author's opinion, the following should constitute the status of the clinical value of the Wassermann reaction as a diagnostic measure.

1. A negative Wassermann test in the presence of definite syphilitic lesions is a possibility in a certain stage of the disease.

2. A positive Wassermann test in the presence of non-syphilitic disease should not always mean syphilis. It should, however, arouse suspicion to study the patient from every possible angle in an endeavor to explain this positive reaction.

3. While a strong positive reaction in a subject who is not ill should cause investigation, nevertheless, too great stress is not to be put on it, unless this finding is confirmed by a number of reliable laboratories.

In concluding, Doctor Strickler again exhorts the physician not to rely upon the positive Wassermann alone but to consider all the symptoms.

SYPHILIS IN ITS RELATION TO PREGNANCY AND INFANT DEATH

Amand Routh (*Health and Empire*, Vol 1, No. 4, March 1922) says that it is roughly estimated that from 16 to 20 percent of antenatal deaths and early neonatal deaths are due primarily to syphilis. Taking the lower estimate of 16 percent, it would mean that, in 1920, the deaths from syphilis during pregnancy and the first week of life would have been over 15,000 in England and Wales.

Doctor Routh recommends the following problems for consideration:

1. Notification of venereal disease, associated with continuous treatment until cured.
2. Confidential death certificates, or alternatively compulsory life insurance of both parties before marriage.
3. Registration of stillbirths.
4. More facilities for research as regards antenatal deaths, and for examinations of all expelled products of conception.

MEDICINE'S DUTY TOWARD THE TUBERCULOSIS PATIENT

Although physicians as a rule are pessimistic as to the results of treatment in tuberculosis, this feeling is not justified by the mortality statistics of treated and untreated cases. According to Dr. F. M. Pottenger (*N. Y. Med. Jour.*, Jan. 4, 1922), early diagnosis is important; but, unfortunately, physicians are often unable or unwilling to make such a diagnosis. Such general symptoms as loss of weight, hoarseness, cough, and blood spitting should arouse suspicion. Elevation of temperature may or may not be present. It is with these early manifestations that the physician should familiarize himself. Treatment, especially rest, food and exercise, should be properly instituted. Any physician can prescribe sun treatment intelligently if only he will master the principles underlying its use. The personal relationship between patient and physician is highly important. In some cases, measures should be taken to combat the acidosis by the use of alkalies and water. It is the duty of the physician to instruct the patient to conduct himself in such manner as not to endanger others.

Among the Books

DORLAND'S "MEDICAL DICTIONARY"

The American Illustrated Medical Dictionary. A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology, and kindred branches; with new and elaborate tables. Edited by W. A. Newman Dorland, M.D. 11th edition, Revised and Enlarged. · Philadelphia and London: The W. B. Saunders Company, 1921. Flexible leather binding. With or without thumb index.

Among the many evidences of the ceaseless growth of medical and allied sciences, the constantly increasing volume of the technical dictionaries bears especially eloquent testimony. To have a new "Dorland" announced means, to have available a work that will supply the answer to virtually every question as to definition (and much more) of any term, old or new, that may come to our attention. We have made editorial use of "Dorland" for many years; which means, that this source of information has been put to constant and severe, every-day use. The most searching examination of the successive editions has not disappointed us in more instances than might be counted on the fingers of one hand. If we say frankly that we depend upon "Dorland" in preference to every other available dictionary, we mean no invidious comparison, no disparaging condemnation of other work of the kind. We simply want to declare that, to us, this particular medical dictionary is the most serviceable, the most satisfactory one available.

The publishers enumerate among the new features of this present, eleventh, edition of Dorland's Medical Dictionary the following:

It is newer by one year than any other Medical Dictionary on the market.

It contains 28 more pages than the previous edition.

It defines over 1500 new terms, the majority of them not being in any other dictionary.

Anatomical names of the B.N.A. terminology are distinguished by inserting after them the sign (B N A).

The new terminology of the American Society of Bacteriologists is included. All the new bacterial names of this terminology are defined, i. e., Hemophilus, Brucella, Pasteurella, etc.

It gives special consideration to the historical aspect of medical terms.

It contains all the new tests.

It is printed on specially thin paper, giving quantity and quality without weight or bulk.

It is the only Dictionary that will stand the acid test for new word service.

Speaking of medical, and other technical, dictionaries in general, the question will soon arise whether future editions do not threaten to become unduly bulky; and, whether it will not be permissible to omit certain terms from citation whose meaning is self-evident. Guttmann's "Medizinische Terminologie" follows that plan, with the result that more space is gained for those terms that require more detailed elucidation. That, though, is an academical question that must be decided by lexicographers themselves. To us, we repeat, such a dictionary as "Dorland" is an ever-dependable fountain of information. It is cordially and urgently recommended to all physicians, dentists, veterinarians, and others whose work falls within the range covered by it.

"PRACTICAL MEDICINE SERIES"

The Practical Medicine Series. Comprising Eight Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Charles L. Mix, A. M., M. D., Chicago: The Year Book Publishers. Series 1921.

Volume VII. Skin and Venereal Diseases. Edited by Oliver S. Ormsby, M.D., and James Herbert Mitchell, M.D.

In view of the active campaign against the venereal diseases that is now being maintained, this review volume of the literature for the past year will necessarily prove of interest. A great deal of work is being done by investigators all over the world, especially regarding syphilis. The numerous difficulties attending the clinical utilizations of the diagnostic Wassermann test were met, in the opinion of many, by the Sachs-Georgi reaction which seems to be a modification of the Wassermann test. The Reviewer is curious to see how the red-cell resistance test, proposed by Roman, in the April issue of CLINICAL MEDICINE, will compare with both the Wassermann and the Sachs-Georgi tests.

Volume VIII. Nervous and Mental Diseases. Edited by Peter Bassoe, M.D.

In the eighth volume, that devoted to nervous and mental diseases, we note with surprise

an abstract of an article by E. A. Foley, according to which luminal employed in well selected groups of epileptic patients gave less satisfactory results than did the bromides. This does not coincide at all with our own experience, according to which luminal is far superior to the bromides in its sedating action, and far less attended by undesirable by-effects. Other physicians, likewise, favor luminal very much and decidedly.

"The Practical Medicine Series" is a remarkably valuable publication, one that enables the general practitioner to keep up with the times and that does not encroach so much upon his leisure time as does the regular reading of numerous medical journals. We do not mean to say that the reading of medical journals should be neglected. Still, we realize that there isn't always time or opportunity. Moreover, oftentimes, it is preferable to take cognizance of certain notable publications, first through abstracts. If they are of importance to the individual physician, he can then go back to the original communication with all the greater benefit.

SCHEPPEGRELL: "HAYFEVER AND ASTHMA"

Hayfever and Asthma. Care, Prevention and Treatment. By William Scheppegrell, A. M., M. D. President, American Hayfever Prevention Association, etc. Illustrated with 107 Engravings and 1 Colored Plate. Philadelphia and New York: Lea and Febiger. 1922.

A book of twenty-six chapters, very complete in all its aspects, giving all the information necessary for the physician in order that he may have a thorough understanding and a practical knowledge of hayfever. Of particular interest, aside from the practical chapters on prevention, treatment, including immunization, and so forth, are the several chapters detailing common hayfever plants in various parts of the country. This includes the trees, grasses, sedges, ferns, palms, etc. Another chapter is devoted to plants not responsible for hayfever, the goldenrods, roses, dandelions, and other common wild flowers.

Commenting upon the disease itself, there is a very clear and concise discussion which includes a chapter on the anatomy and physiology of the nose, symptoms, susceptibility, diagnostic tests; also a very instructive chapter on prevention and treatment, particularly immunization. The volume is very well written and is one that could well be placed in the hands of the layman.

Its particular value, however, lies in the fact that it is a straight-forward statement and description of a proven method of treatment by means of pollen extract, and so forth, which the average physician can follow without difficulty. It is a particularly welcome addition to the literature at this time, when there is great need of standardization of pollen extracts and some definite outline as a working basis. The literature at the present time is highly confusing, inasmuch as several observers speak of pollen antigen in various terms and use various methods of preparing the extracts and standardizing them. Doctor Sheppegrell, unquestionably, speaks with authority as he has probably done much, if not more practical work in this particular disease than anyone else we know of.

COBB: "ORGANOTHERAPY"

Aids to Organotherapy. By Ivo Geikie Cobb, M. D., M. R. C. S. New York: William Wood & Company. 1922.

The author informs us, in the Preface, that "this small book aims at summarizing our knowledge of organotherapy. To enable the reader to grasp the basis of this method, the physiological facts which are relevant to the various secretions have been dealt with at some length; and those secretions which stand most firmly upon physiological and clinical evidence have received the most consideration.

"From the therapeutic aspect, the thyroid is preeminent, and it has been considered that a relatively large part of the book might with advantage be devoted to this gland and its extract; for here the reader unfamiliar with organotherapy will find a satisfactory extract with which to become familiar, first in theory and then in practice."

The little book is easy to read, the text is not only interesting but suggestive and stimulating to further, personal, research. We have found much in it that is of great value, and have discovered statements of facts that are valuable for practical application. The volume can be cordially recommended.

HARROWER: "ADVENTURES IN ENDOCRINOLOGY"

Adventures in Endocrinology. By Henry R. Harrower, M. D. Glendale, California. The Literary Department of The Harrower Laboratory. 1922.

This latest book of Harrower's is dedicated "To my esteemed colleague George H. Simmons who, by his opposition through twelve years, has stimulated me more than many a well-wishing friend." Anybody who knows

Doctor Harrower personally will agree that this dedication was penned not in a sense of bravado or of sarcasm but actually in all sincerity. He, undoubtedly, has learned the truth of the statement that a man learns most from his critics.

The little book before us is written frankly *pro domo;* that is to say, its purpose is a defense against numerous criticisms (that have appeared, notably, in the *Journal of the American Medical Association* and in *Endocrinology*) of pluriglandular therapy and of Harrower's commercial activities; also a vindication of these same activities and of the views that Harrower has promulgated for years. The author does not spare his adversaries, citing passages from their polemical articles and maintaining his position. It seems to us that Doctor Harrower scores several points in this book of his, just as he has done in his earlier ones.

There can be no manner of doubt to the practitioner that the clinical employment of endocrine substances is a proper method to adopt for the purpose of studying these agents which still present many mysteries and, no less, for the purpose of extending to the patients those benefits from the administration of endocrine substances that may accrue to them through a proper selection of the agents. In his little book on organotherapy (reviewed in this issue of CLINICAL MEDICINE), Cobb declares that, "in organotherapy, the work of the clinician is of the first importance. He has to rely upon the physiologist for the data upon which he founds his treatment; but the utility or otherwise of organic products rests for proof on his hands, for he, and he alone, is working with the living human being. This is shown by pluriglandular preparations. . . . Again, in functional derangements, which form the bulk of the cases that the medical man is called upon to treat, organotherapy, judiciously applied, will often work wonders, and will turn the scale between well-being and ill-health. The truth is, that all workers in this field are convinced of the future which lies in front of organotherapy, while admitting that, in its present stage of development, results achieved in practice often remained unexplained in theory. Nevertheless, laboratory work is but the beginning of medicine and points the way to the physician; the latter must build up his therapy from facts collected at the bedside. He alone can collect clinical facts which are of value, and the comparison of his results with those achieved by experimental physiology must, in time, solve many problems which are at present unexplained."

We believe that these points are well taken and that both, the clinical utilization of endocrine substances and the prescribing of pluriglandular preparations, are fully justified.

If it is objected to clinical work that not sufficient controls can be maintained to determine actually the usefulness or otherwise of an agent under investigation, it may be rejoined, as Harrower has done, that a great many of the patients who have clearly benefited from the administration of pluriglandular remedies have been through the mill, so to speak, had been subjected to all sorts of drug treatments, surgical interventions, and physiotherapeutic methods. If, under those circumstances, the administration of pluriglandular remedies produces unmistakable improvement, the conclusion is justified that these last-mentioned remedies were responsible for the outcome.

If the academician, especially the physiologist, demands that, for the purpose of experiment, it is not permissible to employ any other remedies than the single endocrine factor under investigation, the conditions laid down in this matter never can be complied with by clinicians, for, no physician will be willing to administer one single remedy (unless this alone be indicated) to the exclusion of other means (whatever their nature may be) that might afford contributory benefit. After all, the physician's sole purpose and his primary duty is, to benefit his patient and to relieve him of his ailments. The establishment of a remedy or a method is only second in his interest. Nor can this be objected to; for, even in animal experimentation, there are numerous factors that tend to obscure the outcome of the experiment and, in the last instance, the animal experiment is but a poor staff to lean on in establishing or in condemning any particular substance. It might be argued that it is no better than the clinical experiment. If it is as good as the clinical experiment, properly conducted, it is worthy of all commendation.

Doctor Harrower's book causes us an occasional chuckle of enjoyment. The Reviewer confesses to being rather partial to the ideas that he has proclaimed for years. We, naturally, like to see him score.

MELLISH: "WRITING MEDICAL PAPERS"

The writing of Medical Papers. By Maud H. Mellish. Editor of The Mayo Clinic Publications. Philadelphia: W. B. Saunders Company. 1922.

This little book makes us think of the hackneyed expression about good things com-

ing in small parcels. The remarkably useful and valuable advice given by the author to those writing, editing, and proof-reading medical papers could not very well have been condensed; it *might* have been made to fill a volume twice and three times the size of this one. The author's advice is good and worthy of acceptance; the information concerning the mechanical features of writing, proof reading, references, and the numerous other points to be observed is helpful; the list of standard abbreviations for medical journals is highly appreciated. We are indeed grateful to Miss Mellish for writing the book and shall keep it on our desk, for frequent reference. Also, we urge all medical men who write for journals to do likewise. They will benefit greatly from doing so.

STONE: "SEX SEARCHLIGHTS"

Sex Searchlights and Sane Sex Ethics. An Anthology of Sex Knowledge. Edited by Dr. Lee Alexander Stone. Chicago: Science Publishing Company. 1922.

Here is a "sex book," intended for the instruction of the intelligent, thoughtful layman and laywoman, that is about as complete as it can well be made. In fact, it is almost too complete. There are few problems connected with the all-pervading sex life of the adolescent and the grown-up that do not find discussion in its pages. We may say at the outset that, throughout the whole volume, the language is dignified and simple. There is not a single prurient or suggestive passage to be found in the text; nothing that could put wrong thoughts into the minds of young people; nothing that could tickle the fancy of those mentally perverted who search this kind of book for lewd or obscene ideas.

The book naturally contains, first of all, a description of the anatomy and physiology of the reproductive organs, also a discussion of puberty, sexual congress, masturbation, impotence, and so forth. The problems of marriage, of birth control and of contraception are accorded careful and wholesome consideration. There are sex facts for the male, for young women, for married people. The venereal diseases, prostitution, abortion, abortionists and other quacks, are all inquired into and considered truthfully and thoroughly. An impressive chapter is that entitled "If Every Man Were Straight." One can imagine what kind of a world we would be living in—if every man were straight. Another chapter that should be heeded is "Are Children Getting a Square Deal?" The last three chapters are devoted to an anthology of sex knowledge embracing quotations from numerous noted authors; to a series of sex tragedies, cited mostly from Wm. J. Robinson's "Never Told Tales," and to a collection of suitable poems. A glossary and a bibliography followed by a very good index close the book which contains 724 pages of text.

As to its completeness, it may be truly said that the volume is almost encyclopedic in nature. The only important omission that the Reviewer has been able to find is, that the problem of the climacteric in the male has not been considered. This is a deficiency that should be made good in a later edition; for, the climacteric in the male is a very serious period and one which gives rise to many sad tragedies.

We have said that the language employed is popular and, at the same time, dignified and free from suggestiveness. It appears to us, though, that for a "popular" book, it is almost too large and cumbersome while, as a scientific treatise, it would be too popular in its language. Still, aside from sexologists, a great many physicians are hardly better informed on many phases of the sex problems than are the laity. Therefore, the completeness of the discussion may be accepted with approval. Unfortunately, the proof reader has been remiss on a few occasions; otherwise, the book is beautifully built and well printed.

Personally, the Reviewer believes that it is preferable to separate the instruction for adolescent boys and girls, from that intended for married people. A volume containing all the available material can not very well be given to young people indscriminately. We believe that three separate volumes would be more practical and would serve the purpose better than the one large book.

ORTNER: "ABDOMINAL PAIN"

Abdominal Pain. By Prof. Dr. Norbert Ortner. Authorized Translation by William A. Bram, M. D. and Dr. Alfred P. Luger. New York: Rebman Company. 1922.

Probably every physician in the early years of a general practice has wished for a work like this. As an aid in diagnosis, it would be invaluable. Abdominal pain is sometimes an indication for prompt operative interference. To decide when this is true and when not, constitutes one of the most serious problems the doctor is ever called upon to face. So, a work like this should prove a boon, especially to the physician who is situated where counsel from skilled surgeons is not always promptly available.

A complete system of cross references is provided by a very full table of contents and index.

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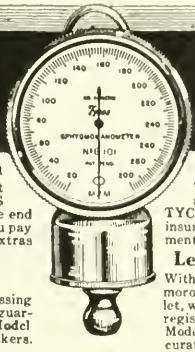

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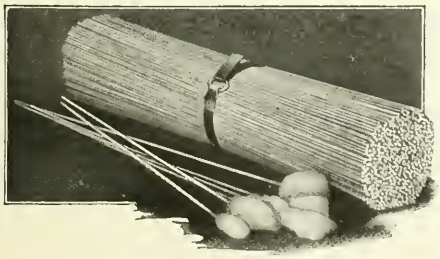

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News Notes Department

Years ago pain was considered salutory. People were exhorted to endure it, rather than attempt to avoid it. In fact, there were laws in the old days imposing heavy penalties on persons who contrived to relieve the sufferer. Even within memory of most of us the use of chloroform or opiates in labor, as means of carrying the mother through the painful ordeal, were viewed with holy horror.

But happily we have become more sensible. No doctor withholds an anodyne from a patient. He only chooses it circumspectly, prefers the coaltar anodynes not singly but combined, as in "Phenalgin," in which the aim is to avoid the depression common to these agents. Those who have never tried Phenalgin should write to Geo. C. Cook & Co., New York City, for a sample.

The exhibit which probably attracted the most attention at the meeting of the Ohio State Eclectic Medical Association, which was held in Cincinnati on May 16th and 17th, was a collection of growing drug plants transplanted from the drug garden of the Wm. S. Merrell Company, at their laboratories. The collection included among others the following drugs: echinacea angustifolia, conium maculatum, apocynum cannabinum, hydrastis canadensis, cimicifuga racemosa, tanacetum vulgare, asarum canadense, geranium maculatum, collinsonia canadensis and achilea millefolium. The Merrell Company also exhibited specimens of the drugs used in making their Proteogens, with charts showing the effects of their administration.

We think that all such efforts as this in the interests of drug culture deserve credit and encouragement.

Peralga is a new synthetic for the relief of pain, and especially headaches. It is the most recent addition to the list of well-known medicinal products marketed by Schering & Glatz, Inc., but originated in the pharmacologic laboratory of Prof. Starkenstein, University of Prague.

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Camphor in alcoholic solution has been a popular household remedy for many years. Generations of families have vouched for its merits. A bottle of it is even now kept at hand by a great many persons, who run to it after accidental cuts, punctures, abrasions and sundry wounds. The belief has held firmly that its immediate application will forestall infection and suppuration which, without it or something equally good, might easily follow such injuries. What is more, it is reputed to be more or less analgesic.

The preparation known as Campho-Phenique presumably affords these merits plus the more powerful antiseptic merits of phenol. At any rate, it is in constant use in numberless offices, by physicians in all sections of the country. Samples are being sent out on requests. Address the Campho-Phenique Co., St. Louis, Mo.

To secure sleep and sedation without opiates or bromides has been the aim of the physician in recent years and laboratory workers accordingly have sought diligently for the means. The search was started in at least one laboratory years ago, that of John B. Daniels, in Atlanta, Ga. The light was seen early here; the need anticipated and apparently met with a tincture of passiflora incarnata.

Users pronounce it very useful in cases of hysteria or nervousness needing sedation, for the restlessness and tossing about so troubling in fevers generally, and for insomnia. It is said to produce the desired results without depressing the heart; to do its work safely as well as effectively. With these merits it could scarcely have attained less popularity in medical circles than it has; for years this tincture, which bears the trade name of Pasadyne, has been regarded as a proprietary of the highest grade.

To live without bread would be a hardship to most persons, so strong is the habit and inclination for the buttered slice. As the staff of life, however, bread is no longer to be so considered, meaning the white bread of the ordinary bakery and kitchen, which nearly everyone is accustomed to eat. For, while still a fairly good source of carbohydrate, this old-time article of diet has been shorn, by the new processes of milling the flour from which it is made, of much of its formerly esteemed food value.

No matter, the eating of bread is a fixed habit. Nearly all must have it, including the diabetic; or they must have its equivalents

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such as biscuits, muffins, etc. For the diabetic, though, it is necessary to provide a starch-free loaf, baked from a starch-free flour, the most reliable brand of which is said to be Lister's. In the interests of your diabetic patient bear in mind Lister's Diabetic Flour, and insist that the bread he eats is made from it.

Every so often a new remedial agent is introduced which, because of its innate merit and the crying need for precisely that thing, commands an immediate acceptance. Incitamin, in this writer's opinion, is destined to meet with a particularly warm and general welcome for the cogent reason that its application causes old varicose ulcers to heal with astonishing celerity and wounds, which have persistently refused to close over, to heal as perfectly as could be desired. Moreover, after the first application, pain usually ceases and any existing infection is speedily overcome. Incitamin has given just such definite results in several cases under this writer's immediate observation and those who employ it with faint hopes of success are apt to be pleasantly surprised. Incitamin is a sterile, stable, nontoxic serous liquid, containing the active ingredients of various glandular secretions—mainly those of the pancreatic and salivary glands. With the exception of 0.5 percent phenol as preservative, no chemicals, other than those existing in the gland secretions and tissue juices from which it is prepared, are present. It is applied on gauze as a wet dressing and may with perfect safety be intrusted to the patient. Carl Nielsen, 4886 North Paulina street, Chicago, is the United States agent for Incitamin and will be pleased to supply literature and case reports.

Ragweed. By far the greatest number of hay fever patients who call on the doctor for relief have their trouble in the late summer or fall. Their nemesis is ragweed pollen, in most instances. The pollen of ragweed is particularly equipped for trouble making. Unlike many other kinds of pollen, it is small and very light, while bearing upon its surface disproportionately large and wicked spicules, and being light is easily picked up by the wind, charging the air, and reaching a great many people.

Treatment should be begun early, with Abbott's Pollen Extract, an antigen preparation derived from ragweed pollen and therefore peculiarly suited to most of the cases. Locally, to give immediate relief and to carry the patient through, an ointment containing anesthesin is extremely useful. Such an ointment is supplied by The Abbott Laboratories, Chicago, under the name of Aneskreme. An oil solution for spraying the nose and throat is likewise useful. This is sold as Anespray by the same firm.

Another silver of the colloidal class is available to prescribers and a great many are using it. We refer to Silvol, from the laboratories

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You greatly relieve all these troubles for your little patients, Doctor, if only you will advise the liberal use of McK & R Compound Stearate of Zinc.

After the bath, Compound Stearate of Zinc applied as a routine measure, tends to overcome prickly heat, and skin discomforts generally. A liberal dusting with McK & R Compound Stearate of Zinc around the genitals and in the tissue folds, will render the local surfaces moisture-proof, and prevent the irritation following acid discharges. Do not forget Compound Stearate of Zinc as a valuable aid in preventing and overcoming sunburn, in adults as well as children.

If you're not already familiar with McK & R Compound Stearate of Zinc, send card for literature and samples of this valuable product.

McK & R

McKESSON & ROBBINS
INCORPORATED
MANUFACTURING CHEMISTS

Established 1833 New York City

of Parke, Davis & Co., Detroit. This preparation takes the form of dark brownish scales, which in turn are conveniently furnished to the physician or druggist in capsules for preparing solutions.

A Silvol solution, even up to the 30% strength, is said to be unirritating to the conjunctival or urethral surface. It is recommended by the firm for use variously, to wit, by instillation, injection, or application on swabs or tampons. The eye, it is said, may be flooded with a Silvol solution without causing the patient discomfort, that is, any more than would be experienced by dropping plain water into an inflamed eye. On the other hand, solutions are said to have a soothing effect following application. A circular issued by Parke, Davis & Co. shows its range of usefulness.

What food lacks, that is food as available to the average person, may be provided and is being provided by a class of preparations calculated to supplement the meal. For this enterprise credit must be given to those who first described the deficiency diseases, as for example, beriberi, one of the most notable disorders following a deficiency of the vitamine present in whole rice but missing in the polished rice in vogue today.

In the same way, the lack of other vitamines gives rise to other disorders more or less serious or to symptoms abnormal to the healthy person. And hence the logicalness of supplementing the diet with such a preparation as Nutramine (Norwich Pharmacal Co.) which supplies all three of the recognized vitamines, designated by the three first letters of the alphabet.

Dyspepsia. We have a national anthem, a national emblem, and also a national disease, popularly called dyspepsia. The doctor has it always and continuously to deal with, flatulence being one of the most distressing symptoms the patient has, this and heartburn.

Those who are given to searching out the cause for things, blame iced water, to which a great number of Americans are habituated. Iced water may at least be partly to blame. It is also likely that hurry at mealtimes is a factor. Europeans are neither given to the one nor the other.

Now habit is strong and idly opposed in most cases. But the doctor can and ought to give his patients relief, which he may very often do effectually with Peptenzyme, that favorite Reed & Carnrick item.

An antiseptic for home use, one which the doctor might safely recommend to his patients for use between visits, was practically unknown till the Oakland Chemically Co. bought hydrogen peroxide to notice. They introduced it under the brand-name now known by almost everyone, Dioxygen. At that time (as now) hydrogen peroxide solutions were extremely unreliable; many of those sold were in fact weak to the point of inertness, the inertness

Efficient Endocrin Therapy

demands that the raw material be carefully selected and properly kept until manufacture. Preparations of endocrins should not be combined with other agents, such as calcium phosphate or strychnine, which may be given separately when indicated.

Our endocrins are supplied in capsules, comprising

CEREBRIN	OVARIAN COMP.
CORPUS-OVA COMP.	PARATHYROID
DUODENAL COMP.	PITUITARY COMP.
LECITHIN COMP.	RENAL
LYMPHATIC COMP.	THYMUS COMP.
MAMMARY COMP.	THYROID-IOFORM COMP.

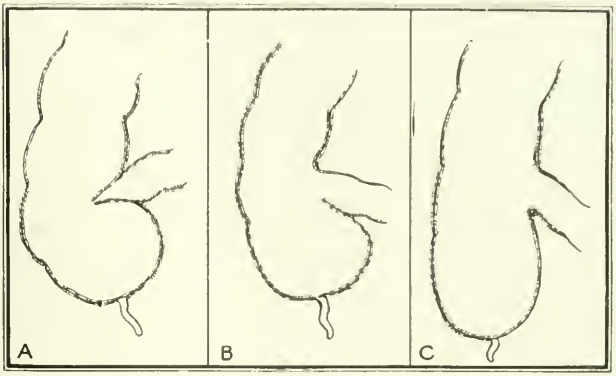
and several other formulae

QUALITY SUPERIOR. PRICE EXCEPTIONALLY LOW.

For literature, price lists, etc., address

The Drug Products Co., Inc.

153 MEADOW STREET LONG ISLAND CITY, N. Y.



A. Normal Ileocecal Valve. B. Partially Incompetent Ileocecal Valve. C. Wholly Incompetent Ileocecal Valve.

Reproduced from "Colon Hygiene," by J. H. Kellogg, M. D.

The incompetent ileocecal valve and Petrolatum Liquidum

A noted authority, whose observations have covered hundreds of cases, states that aside from routine measures, the regular use of liquid petrolatum is the most effective means of combating incompetency of the ileocecal valve. Medicinal laxatives increase the antiperistalsis by which the reflux from the colon into the small intestine is increased. Liquid Petrolatum increases the motility of the small intestine, but does not increase antiperistalsis.

To find a viscosity which would give Nujol its greatest efficacy, its makers conducted exhaustive research and clinical test. Consistencies were tried, ranging from a thin fluid to a jelly. The viscosity finally adopted is the one best suited to human requirements and is in accord with the opinion of the highest medical authorities.

That the value of Nujol to the medical profession is generally recognized is attested by its use by physicians and in hospitals the world over. Sample and authoritative literature dealing with the general and specific uses of Nujol will be sent gratis.

Nujol

REG. U.S. PAT. OFF.

A Lubricant, not a Laxative

Guaranteed by Nujol Laboratories, Standard Oil Co. (New Jersey)
44 Beaver Street, New York City

of the water itself which in the first place had presumably been charged with it. Dioxygen (as now) stood for a solution that was active and would remain so for a reasonable length of time.

Here is an antiseptic which the physician might far better encourage the use of than the tincture of iodine, for household use. The daubing of iodine upon all sorts of wounds, recklessly and indiscriminately, is too commonly done. Contrary to the general belief, iodine is not a good antiseptic because it interferes greatly with phagocytosis. And old solutions are decidedly irritating.

The old doctor and the young one were discussing diuretics. The young man had championed the use of digitalis. The elder smiled. "You are right, son," he said. "in theory. I used to say the same. But you will learn better after a while. Digitalis has its uses; it's a valuable drug. But when you want to increase renal excretion, not only of fluid, but also of urinary solids, take my tip and use Anasarcin. You will get a definite action and a safe action. When you have a dropsical condition present; when you have effusion of fluid into the tissues, from say, a cardiac valvular lesion, chronic Brights, postscarlatinal-nephritis, or albuminuria in pregnancy, use Anasarcin."

This is a combination of two active principles from squill, with sambucus and oxydendron. It is said not only to support the heart as well as acting as a diuretic. One can use it action, but to control and regulate its rhythm, with benefit in exophthalmic goitre and cardiac neuroses.

A post card to The Anasarcin Company, Winchester, Tenn., will bring a sample and literature.

Colloidal silver. The drawback common to all inorganic salts of silver, which restricts their usefulness to rather narrow limits, is that they precipitate albumins upon contact with the tissues, causing more or less irritation and pain, and defeating their penetration.

The problem for the chemist, therefore, has been to find a salt absolved from these objections. Electrargol seems to terminate the search. This is a colloidal silver preparation, in which the metal is minutely subdivided and chemically joined to a proteid. Silver in colloidal form is said not to irritate, even in contact with sensitive mucous surfaces. E. Fougera & Co., 90 Beekman street, New York City, are the American agents for the preparation named, which is of French origin. Information in detail may be had from them.

A new drug that is certain to interest a great many has just been announced from The Abbott Laboratories, Chicago. We refer to Neocinchophen. It will be available from now on in 5-grain tablets. Being an ester (whereas Cinchophen, which preceded it, is an acid) this drug is less likely to irritate the

A SPECIAL COURSE BY MAIL IN IMPROVED AUTO-HEMIC THERAPY

(Autohemotherapy)
FOR

FIVE DOLLARS and FIFTY CENTS

A POST GRADUATE AUTO-HEMIC COURSE FOR PHYSICIANS AND MEDICAL STUDENTS IN AN ILLUSTRATED BOOKFORM.

The Course Teaches the Improved Technique and Laboratory Procedures of Auto-Hemic Intravenous Medication

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"IMPROVED AUTO-HEMIC SERUM THERAPY" with a preface by Dr. Albert Abrams, a foreword by Dr. George E. Bill of Harrisburg, Pa., with 14 original photographs of the improved technique and laboratory apparatus, instructs the student in EVERY MINUTE DETAIL of taking the blood from the patient's vein, "HEMOLYSING," "POTENTIZING" and "ATTENUATING" the blood specimen and injection into the patient. An exact, concise work, giving full details as to the method of Auto-Hemic Serum and Intravenous medication.

"The way you have perfected Auto-Hemic Therapy technic deserves all the credit and admiration of the medical profession. Auto-Hemic medication has come to stay! The great therapeutic results, which cannot be obtained any other way convinces more and more physicians every day. Anyone in doubt would be more than convinced observing your perfect technic. I believe that you improved the method to its fullest detail and the same time overshadowing the old system. It will be the future treatment of the progressive physician."—Dr. A. H. Werner, New York.

"Will you allow me to congratulate you on the clear and concise form of the text of your book Improved Auto-Hemic Serum Therapy, and the clear way you put the matter up. The case reports are next to marvellous and the theory is not only scientific but practical.—Dr. T. H. S."

Address

DR. C. B. GRAF'S New York Auto-Hemic-Intravenous Clinic

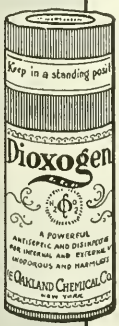
320 West 87th Street, New York City

Dioxogen = (Hydr. Diox. Oakland)

H_2O_2 12v

STUDY and practical experience have demonstrated that hydrogen peroxide manifests its maximum efficiency, only when it is free from those impurities which interfere with the prompt and unrestrained liberation of the pure oxygen, on which its action depends.

Dioxogen


Keep in a standing position
Dioxogen
A POWERFUL ANTISEPTIC AND DISINFECTANT FOR INTERNAL AND EXTERNAL USE
NON-POISONOUS AND HARMLESS
OAKLAND CHEMICAL CO.
NEW YORK

therefore, is universally recognized as the best and most effective peroxide of hydrogen, not alone because of its greater volume of available oxygen, which far exceeds U. S. Phar. requirements, but particularly because of its exceptional freedom from residual substances which would restrain in any way the free release—and full effects—of this all-important constituent.

The value of oxygen as a purifying and antiseptic agent is too well established to require extended comment; its influence on disease germs, morbid processes, and its stimulation of granulation and tissue repair are so well understood, that further statement is unnecessary.

In a word, Dioxogen offers a means whereby a large amount of pure, uncontaminated oxygen may be brought directly to the places where it is required and in the active condition necessary to assure its highest potency.

OAKLAND CHEMICAL CO.
59 Fourth Avenue NEW YORK CITY

stomach and may on this account be given without alkalis. That it has this advantage is affirmed by users of large experience with both drugs.

The indications for the use of the two drugs are identical. In Neocinchophen, the physician has a surer remedy for the pains of acute rheumatism than the salicylates. Besides, he has a remedy that patients can take who do not bear salicylates well. It does not irritate the kidneys as they do and one may rest easy on this score when prescribing it. Relief may be had from it in other painful conditions, such as neuritis, arthritis, lumbago, sciatica and headaches. Being unknown to the laity, it may prudently be substituted for aspirin in many instances, with even better results.

Printing for the doctor. Too often the professional letterhead and bill form are considered slightingly, as too trivial to bother with, and so entrusted to any handy printer to turn out according to his ideas and the conventions of his trade. This is a species of slovenliness which no professional man, no more than a business man, can afford. Appearances count and we are all more or less judged by them. We are judged according to our dress, our equipage, our equipment and even our stationery.

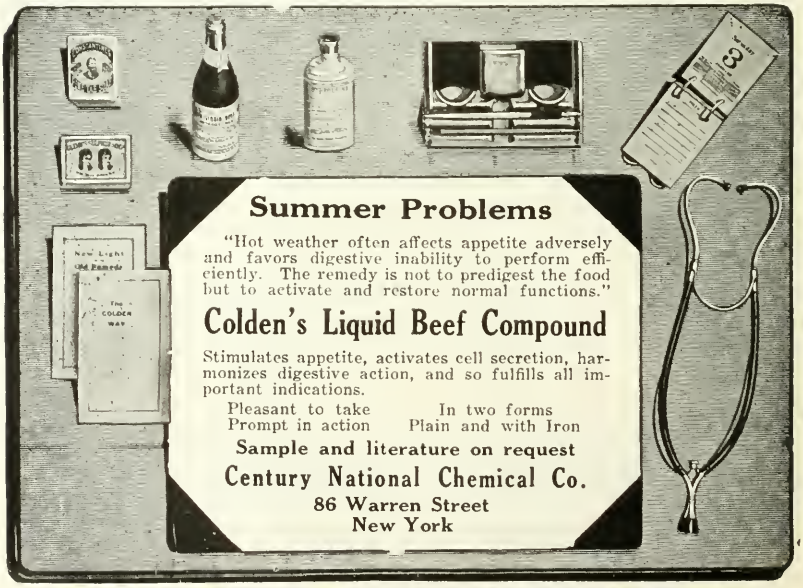
In small towns, old ideas and limited facilities are the rule. Why not have your printing done in Chicago, by the Consolidated Printing & Publishing Co., 4017 N. Robey St.? In these parcel post days the remotest resident may avail himself of the largest and best city facilities.

Appreciating iodine. How many know that trouble is bound to follow if the iodine store in the thyroid gland falls below 0.1%? Such a deficiency is apt to give rise to goitrous growths. The other signs and symptoms are less gross but no less actual. The living organism must have its portion of iodine. Little is needed, to be sure, but that little is vital. Formerly, people obtained it as an impurity in their table salt, to wit, sodium iodide; at least this is considered an impurity today.

Hence, the doctor finds it frequently necessary to give it as a medicine, in prescribed doses. Burnham's Soluble Iodine is one of the best preparations available for this purpose.

Nervous breakdowns are multiplying, as every physician knows, the neurotic class growing as the years pass. The subject has been and is being widely discussed. Many reasons are given and all sorts speculations are heard as to the cause. Migration from farms and rural settlements to our large cities is blamed. People are rushing to the cities, from quiet into turmoil, whose organisms certainly are not equal to the radical change. False hopes beckon and ambition leads many astray.

And so we find necessary such a place as the Wallace-Somerville Sanitarium. It is a good place, we learn, for committing nervous and


Summer Problems
"Hot weather often affects appetite adversely and favors digestive inability to perform efficiently. The remedy is not to predigest the food but to activate and restore normal functions."
Colden's Liquid Beef Compound
Stimulates appetite, activates cell secretion, harmonizes digestive action, and so fulfills all important indications.
Pleasant to take
Prompt in action
In two forms
Plain and with Iron
Sample and literature on request
Century National Chemical Co.
86 Warren Street
New York

Sustaining the Patient

THIS is important, particularly in febrile cases. It is sometimes difficult where the stomach is delicate and where milk does not agree.

In such cases have you tried this?

Break an egg into a small tumbler, keeping the yolk unbroken. Pour upon the egg enough Welch's Grape Juice almost to fill the glass. The contents should be swallowed quickly—not sipped.

You will find this a strengthening mixture, giving a maximum of nourishment with a minimum of taxation on the digestive system.

Even those patients who dislike eggs find this drink as delightfully refreshing as it is nourishing.

Welch's

"THE NATIONAL DRINK"

The Welch Grape Juice Company, Westfield, N.Y.

mental cases, some for the complete rest with other favoring factors there obtaining and others for restraint. This sanitarium is located in Memphis, Tenn. The mild winters of this section is a desideratum for certain patients.

Gallstones are causing a great deal of trouble these days, particularly in women of middle age. Nine out of ten persons thus afflicted dread an operation and will not have it, although their objections may eventually be broken down. At best, the operation is a formidable one and the death rate high, which fact there certainly is no denying.

For this reason any medicinal treatment in any way promising relief is easily worth its price. A new recourse is Anti-Cholelith, said to be effective in 75% of the cases. Formula, etc., may be had from the Leon Chemical Co., Springfield, Mo.

Hay fever. From now on pollinosis will claim a lot of victims, as in previous years. Some will seek relief in the north woods, some by the seashore and some at altitudinous points in Colorado. But aplenty will remain at home, for want of time or money or both, looking to the doctor to tide them over this rough spot in their lives.

First to come are those afflicted with that type of the disease which is provoked by pollen from the earlier vegetation forms, for example, from the sun flower, from corn, from timothy. Against the distress thus caused the antigens of the Arlington Chemical Co. (Yonkers, N. Y.) should be used. Material for making a cutaneous test to determine just which pollen is responsible may be had from this firm, and an antigen extract for treatment, made from the precise pollen found to usher in the trouble. The Arlington people have done much fruitful research work along this line.

A good place for patients who have to be kept under close observation or restraint while undergoing treatment against drug or alcohol addiction is a sanitarium. But for lack of means or other reason it is not possible to send all such patients away. The doctor then is obliged to treat a certain number in their homes, using perhaps the method originated by Dr. Quayle, of Madison, Ohio, in his own sanitarium there.

This home treatment of his is available to any physician. It is said to be very practicable and successful. Inquiries should be sent directly to the doctor himself, mentioning this journal.

The thing to insist on by every physician prescribing mineral oil for his constipated patients, next to the requirement that the oil be highly refined, to the point where it is color-

"Massage alcohols" usually leave a heavy, unpleasant odor, due to the denaturant used.

"ALKOLAVE S. & D." — the **quality** rubbing alcohol leaves a refreshingly pleasant odor; it is denatured differently; by special process.

Use it clear or diluted; but only of course on unbroken skin surfaces—never on mucosa and never internally.

"ALKOLAVE S. & D."
In 4 oz. and Pints At Your Druggist's

SHARP & DOHME
CHEMISTS SINCE '60

KELLOGG'S BRAN

cooked and krumbled

is high in food values as well as a natural regulator

Physicians are giving more and more consideration to bran. It may not only be prescribed for minor and chronic constipation cases with confident expectations of satisfying results, but its wonderful food properties (as shown in the accompanying analysis) give it double value to the patient.

Kellogg's Bran, cooked and krumbled, should not be confused with common brans which become so irksome for the patient to eat. Kellogg's Bran is delicious not only in its krumbled crispness, but in its flavor, which appeals to the most fastidious appetites. Eat it as a cereal or sprinkled over cold or hot cereals or in other cooked foods.

As you know, bran induces better peristaltic action by adding indigestible residue in the bowel tract. Eaten regularly each day—at least two tablespoonfuls; in chronic, old-age or bed-ridden cases with each meal—the greatest relief may be anticipated. All grocers sell Kellogg's Bran, cooked and krumbled.

We would very much appreciate physicians sending us a request card for a large package of Kellogg's Bran, which will be forwarded with our compliments. We desire physicians to personally know the value of Kellogg's Bran, cooked and krumbled.

An Analysis of
Kellogg's BRAN
cooked and krumbled

Aside from its regulatory value, Kellogg's Bran commands attention as one of the most valuable foods known. Read this analysis:

Moisture	2.50
MINERAL SALTS	**8.41**
Protein	15.8
Fat	2.8
Crude Fiber	8.9
Carbo-hydrates	61.6
Calories (per pound)	1480.46

Kellogg's

Look for this signature W.K. Kellogg

the original BRAN - *cooked and krumbled*

less, odorless and tasteless, is that it shall be of a certain heavy viscosity. An oil of water-like fluidity will not do medicinally, although for sundry other purposes it may serve nicely. Its consistence should be sirupy, or about that somewhat less heavy than glycerin at ordinary room temperature.

Not all the oils sold are like that. Nujol is and may be prescribed with confidence. Nearly all drug stores have it in stock or can readily obtain it.

Harrower. In the field of glandular therapy, on the commercial side, he is among the most prominent figures at the present time. He has quite recently added a new building to his growing plant in Glendale, Calif. We predict there will be no stopping his progress.

His list of pluriglandular items is already a large one and well selected. In the beginning all formulas were supplied to physicians in capsules. Now they are supplied in the form of friable tablets, every tablet wrapped in paraffined paper, not only thus identifying the Harrower product but keeping it in a clean and fresh condition. The idea is a good one and bound to be appreciated by the most discriminate of prescribers. One of his good items is Adreno-Spermin Co., advertised in this issue of our journal. It is frequently mentioned in favorable terms by users.

In his book on gynecology, Davenport, of Harvard Medical School, says: "Hayden's Viburnum Compound has seemed to be the most effectual remedy of this class, given in hourly teaspoonful doses in hot water, for five or six times."

That the preparation is of great value in the treatment of dysmenorrhea is not only indicated by its employment by gynecologists of today, but in the past by no less an authority than J. Marion Sims, who prescribed it and recommended its employment.

Hayden's Viburnum Compound contains no habit-forming drugs. It is a product of known composition and as a uterine sedative holds first place in the opinion of many physicians as not only a dependable therapeutic product, but a remedy which is safe to administer to their patients. Samples may be had by writing the New York Pharmaceutical Co., of Bedford Springs, Mass.

The demand for Sterilac grows. Less than two years ago we added Sterilac to our list. Today we are turning out a tremendous quantity of this excellent disinfectant and deodorizer; and the demand is growing, like compound interest.

Clearly, Sterilac supplies something that was wanted by a great many people, to-wit, a disinfectant that is deadly to germs but harmless to man and beast. To-wit again, a disinfectant that is practically odorless and leaves no offensive odor in its trail.

Sterilac is that and more. It may be used in kitchens, dairies, bakeshops and anywhere, in

The Management of an Infant's Diet

Diarrhea of Infants

Three recommendations are made—

Stop at once the giving of milk.
Thoroughly clean out the intestinal tract.
Give nourishment composed of food elements capable of being absorbed with minimum digestive effort.

A diet that meets the condition is prepared as follows:

Mellin's Food . .	**4 level tablespoonfuls**
Water (boiled, then cooled) .	**16 fluidounces**

Feed small amounts at frequent intervals.

It is further suggested :—As soon as the stools lessen in number and improve in character, gradually build up the diet by substituting one ounce of skimmed milk for one ounce of water until the amount of skimmed milk is equal to the quantity of milk usually given for the age of the infant; also that no milk fat be given until the baby has completely recovered.

Mellin's Food Company, Boston, Mass.

Why Golden Key Milk Tastes Better

There's a reason why Golden Key Milk *tastes better.* Rich, creamy milk from some of the finest dairy farms in Southern Wisconsin is evaporated, sterilized and sealed in air-tight cans by our special process. Nothing is added, and nothing removed but half the water.

In a test recently conducted, 24 families were given numbered cans of Golden Key and four other leading brands of evaporated milk, with the labels removed. *Eighteen out of the 24 chose Golden Key for first place on taste, color and appearance.*

The chances are that you will like Golden Key better than any milk you have ever used. Because of its purity you will be glad to recommend it.

Look for the Key on the Can

E 122A

GOLDEN KEY MILK

Pure, Rich Milk – *Concentrated!*

short, that food is handled. It is safe for sterilizing milk cans, cooking utensils, dishes, nursing bottles, etc., etc. It is cheaper than the many disinfectant fluids offered; being a powder (94 percent active material), one avoids paying for pump-water.

Those interested should write for booklet and trial sample to The Abbott Laboratories, Chicago, Ill.

An ounce of prevention is worth a pound of cure. How to prevent disease, therefore, is worthy of more concern that has hitherto been elicited among physicians, and all public-spirited people.

Just now sepsis within the oral cavity is being blamed for many long-standing and remote troubles, ailments never before suspected to have connection with the mouth. Even organic heart disease is said to have its origin in pus pockets under the gums. If true, all the more reason for enjoining on one and all alike the habitual use of a good mouthwash, beginning as early in life as possible, even with the eruption of the first permanent teeth in children. Lavoris is one of the reliable preparations of this class, which the doctor can recommend to his families with confidence. It contains a little zinc chloride, just enough to impart a desirable degree of astringency.

Vaginal suppositories. Many women are legitimate subjects for the knife who refuse to consider undergoing an operation, even the

Doctors Can Safely Recommend Sani-Tissue

Many physicians throughout the country, by recommending Sani-Tissue, have earned the gratitude of patients suffering from anal or rectal disorders.

The soft, clothlike quality of this wonderful toilet paper makes it a great comfort to anyone thus afflicted. Sani-Tissue is a medicated, frictionless, absolutely non-irritating paper made under the most sanitary manufacturing conditions.

Sani-Tissue comes to the patient wrapped dustproof in glassine protective paper. It is safe to recommend. Send for a free sample XX.

Scott Paper Company, Chester, Pa.

New York Philadelphia Chicago San Francisco

© S P.Co.

Sani-Tissue

"Clothlike When Crushed in the Hand"

This Doctor Succeeds Where Others Fail

He uses the Philo Burt Method of Spinal Correction in Potts Disease and all spinal troubles.

Does Not Show Thru the Clothing.

There are hundreds of doctors of all schools, throughout the U. S. and in foreign countries who now prescribe the Philo Burt Spinal Appliance in Potts Disease and all spinal curvatures and weaknesses. With them, the old-fashioned torturous unsanitary plaster cast or heavy leather and steel jackets and braces are things of the past. Here is what one doctor says after a number of years' experience in treating various forms of spinal troubles:

"The Spinal Appliance I received from you for use of one of my patients has done wonders. This lady was practically an invalid before using your appliance and is now perfectly well. She has gained about forty pounds in weight and is able to do hard work on a farm and with perfect comfort. She is now wearing her second appliance, but tells me she believes she could get along without it now."

Each Order Is Accepted Subject to a 30 Day Trial

The Philo Burt Appliance with the treatment advised and the exercises recommended will cure all curable cases, many that are believed incurable, and alleviate and improve the condition of all others. It is always made to order from individual measurements and fits perfectly; supplies the right pressure on parts where needed and relieves the pressure that causes the trouble by taking the weight off the spine. It is light and comfortable to wear, can be put on and taken off in a moment, the same as a vest or corset, presents no obstacle to work or exercise and does not show through the dress or clothes. It is stated that 30% of the population of the U. S. is afflicted with spinal troubles. At least 60% of these could be cured by our appliance and 90% of cures can be affected in childhood by its use. Let us send without charge our Physicians Portfolio and explain to you our plan of co-operation.

PHILO BURT CO., 13-19 Odd Fellows Temple Jamestown, N. Y.

"I Tried All The Leading Foods"---

"A fine strong girl born a month ago, steadily lost ground, in fact was rapidly falling away. The Mother's Milk did not at all agree or satisfy. I tried all the leading foods and milk in various modified forms. But nothing satisfied until I sent for a bottle of Nestlé's Milk Food, when, with the first feeding, the little one improved almost as if by magic. The child is now living wholly on Nestlé's Milk Food, and is doing well."

(*Physician's name and address withheld for professional reasons*)

In emergency cases or for routine use you may safely rely upon Nestlé's Milk Food as a dependable nourishing food for babies.

Nestlé's is simply pure cow's milk modified by the addition of malt, cereals and sugar and then reduced to powder form. It is milk, free from pathogenic bacteria, in a form which is easily prepared and readily digested.

Your name and address will bring liberal samples.

Nestlé's Food Company

Nestlé Building, New York
112 Market Street, San Francisco

A campaign of education—No. 4

The Grinding Surfaces

are more susceptible to decay.

During the period between childhood and adolescence the most important part of the teeth to be cleaned is the grinding surface.

Because the corrugated nature of the enamel is most susceptible to decay. Cleanliness of the grinding surface is of the utmost importance.

Dr. R. B. Waite's
Anti-Py-O
Dental Cream

contains vegetable soap which forms a fine lather and quickly enters all the finest interstices. Its germicidal properties are most effective in combating typhoid bacteria which cannot live in soap lather.

The Antidolor Mfg. Co.
12 Main St., Springville, N. Y.

Mail This Coupon Today

ANTIDOLOR MFG. CO.
12 Main St., Springville, N. Y.

On receipt of your professional card we will send you special sample tubes of Dr. R. B. Waite's ANTI-PY-O Dental Cream, including a full size tube for your personal use.

Name .....
Address .....
City .....

slightest. With them, the physician must do the best he can by the local and internal use of such remedies as promise to relieve the distress present.

The vaginal suppository in the contingency will help him out more effectively than he may think. There are a number to choose from, the leading chemists listing one or more. Among the favorites is that made by Micajah & Company, of Warren, Pa. This is known as Micajah's Medicated Wafer. It has been in use for years. Druggists report a large and steady demand for it. Apparently it is too good to discard.

Anyone who thinks that a large laboratory, with a lot of costly equipment, is necessary for determining the essential diagnostic features in urine is deceived.

For example, sugar can be detected readily with F. A. F. Sugartest Strips, supplied by the Franco-American Ferment Co., 225 Sixth Ave., New York City. It takes less than a minute to do so. Simply drop a strip into a test-tube or any porcelain or enamel dish; add a little water and a few drops of urine; boil a little while and the thing is done. If the liquid under examination turns yellow, sugar is present. Nor is there any question about it. For this test is ten times more sensitive than Fehlings Solution.

To make a quantity analysis of a sample of urine, the doctor may use the F. A. F. Sugartest Tubes, furnished by the same com-

SUMMER TIME IS DIONOL TIME

Because hot weather aggravates, or favors, local inflammation. DIONOL acting in accord with definite physiological - electrical laws, reaches and removes the **causes** of local inflammation.

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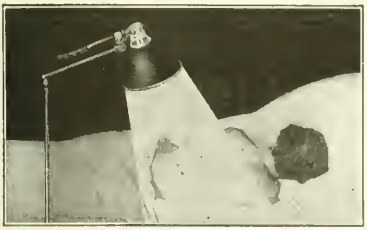

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gas and colic, it is apt to be due to protein indigestion. If gray of color, shiny, greasy and soap-like, with a sour odor, one probably has constipation from fat indigestion to deal with. (The urine in such cases, if severe, is often ammoniacal.)

Again, the use of an excessively starchy food is apt to constipate, or a food deficient in total solids.

Less trouble is had with infants fed on Mellin's Food than any other, according to many physicians and mothers, on the grounds that cow's milk is easily modified with its help to suit the requirements in each instance.

It is customary to value cod-liver oil simply as a source of fats and so to give it in medicinal doses to supplement the fatty elements in the daily fare. In this light it becomes merely a food, although administered by means of a spoon, plain or in some kind of vehicle, as any medicine might be. But analysis shows that besides fatty principles the oil contains several therapeutic principles, among them vitamines.

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Assistant: No; we used the last extra one a few days ago.

Doctor: Better telegraph to the ———— Company's service man at Rapid City to come and remedy matters.

Assistant: I have already done so and learned that he cannot be here for five days.

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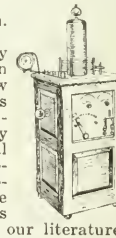

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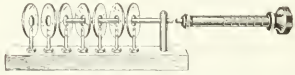

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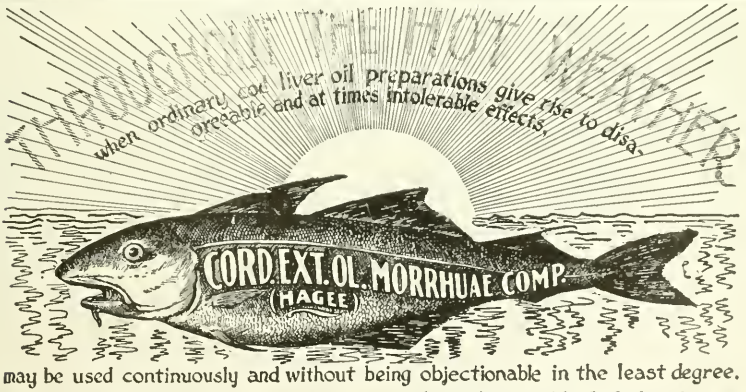
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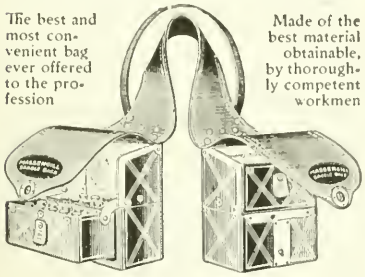

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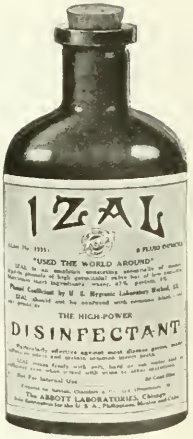

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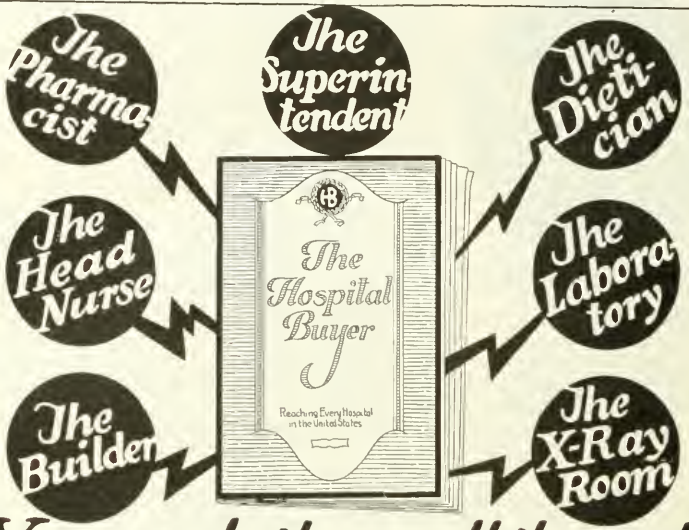

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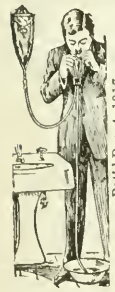

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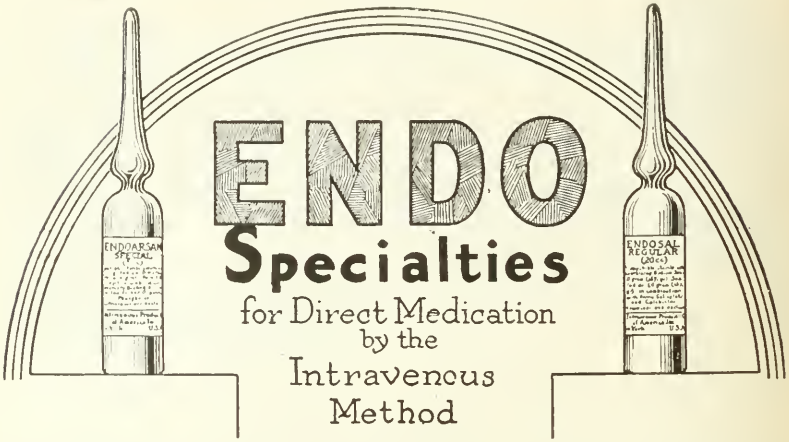

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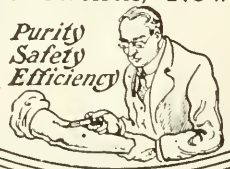

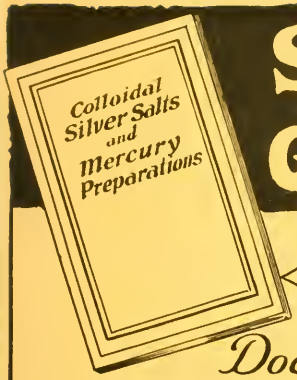

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